

THE
Chicago Medical Journal
AND
EXAMINER.

VOL. XXXIII.—SEPTEMBER, 1876.—No. 9.

Original Communications.

**OVARIOTOMY IN A PATIENT SIXTY-FIVE YEARS
OF AGE, WITH COMPLETE RECOVERY.**

BY C. RICHARDS, M.D., JOLIET, ILL.

Mrs. K., aged sixty-five years, in the early part of 1872, discovered a tumor about the size of a small orange in the left inguinal region. It enlarged slowly until August, 1874, when she could not longer endure the severe pressure upon the abdominal viscera. In August, 1874, she was tapped, and a thin whitish colored fluid was evacuated, weighing thirty-four pounds. In May, 1875, she was again tapped; again in August, 1875; again on the 15th of February, 1876, when sixteen pounds of fluid were removed; again March 4th, 1876, when twenty-three pounds were removed; again March 17th, 1876, when fifteen pounds were removed. On April 6th, the tumor and fluid were removed together, and weighed about twenty-three pounds. It will be thus seen that the time between each tapping gradually decreased. The patient was of lymphatic temperament, and prior to a short time before the operation had enjoyed good health. But after the last tapping she rapidly failed, both in strength and flesh; the stomach becoming very

irritable. The operation was performed at Plainfield, Ill., April 6th, 1876, in the presence, and with the assistance of the following medical gentlemen: Drs. R. J. Curtiss, F. C. Mitchell, and Wm. M. Richards, of Joliet, and Drs. D. W. Jump and A. J. Perkins, of Plainfield, Ill. The patient was brought fully under the influence of ether, and the bladder was then emptied of its contents. A small incision, about three inches in length, was made in the linea alba. The finger was then introduced, and what adhesions could be reached were broken up. The sound was next introduced for the purpose of exploration, and several slight adhesions were discovered at different points over the abdomen, which were easily removed. One somewhat more extensive and firm was found in the right inguinal region. This required separating by the fingers. The incision was now enlarged to about nine inches, and the tumor found to be multilocular, chiefly made up of two very large cysts and a great many smaller ones. The larger cysts were now tapped with a large trocar, and the fluid, which was of a yellow color and somewhat viscid, rapidly drawn off. Not much solid substance was encountered. The sac was then seized and drawn out. The pedicle, which was of medium length, was then tied firmly with a strong silken ligature. The clamp placed on the pedicle below the ligature and the sac cut away. The incision was then closed by deep silver sutures, inserted so as to include the skin and peritoneum, and by superficial silk ligatures, inserted so as to approximate the cutaneous edges. Adhesive straps were applied, and a cotton compress over the wound was held in position by a broad flannel bandage. The pulse being weak, an injection of brandy and water was given *per rectum* and the patient put to bed. The temperature of the room during the operation was kept at about 80° Fahr. The following is a correct record of the symptoms and treatment:

April 6, 1876, 12:25 p. m., pulse 100, temperature normal; 1:25 p. m., pulse 117, temperature normal; 4 p. m., pulse 98, temperature 98°; 7 p. m., pulse 99, temperature 98½°; 12 p. m., pulse 102, temperature 98°. *Treatment*—2:15 p. m., morphine, gr. $\frac{1}{4}$, atropia sulph., gr. $\frac{1}{60}$, hypodermically; 5 p. m.,

injection of beef tea and brandy; 5:30 P.M., morphine, gr. $\frac{1}{4}$, and atropia, gr. $\frac{1}{60}$, hypod.; 9:40 P.M., morphine, gr. $\frac{1}{4}$, and atropia gr. $\frac{1}{60}$, hypod.

April 7, 1876, 2 A.M., pulse 100, temperature $98\frac{2}{3}^{\circ}$; 6 A.M., pulse excited, temperature $98\frac{2}{3}^{\circ}$; 12 A.M., pulse 98, temperature $98\frac{2}{3}^{\circ}$; 8 P.M., pulse 100, temperature $98\frac{4}{5}^{\circ}$; 10 P.M., pulse 100, temperature 99° . *Treatment*—12:30 A.M., beef tea, o.j., brandy $\frac{1}{2}$ j., by injection; 4:30, morphine and atropia; 6:30, beef tea, brandy and milk; 10 A.M., action of heart being weak, two drops of tinct. digitalis were given and continued every two hours until the heart's action became strong and steady. 10:30 A.M. beef tea, o.j., brandy $\frac{1}{2}$ jss., quinia, gr. x. M. By injection. 12:30 P.M., morphine, gr. $\frac{1}{4}$, atropia, gr. $\frac{1}{60}$, hypodermically; 4:30, morphia and atropia, as above; 5, beef tea, brandy and milk; 9 A.M., morphia and atropia; 10, beef tea, brandy and milk.

April 8. Symptoms: 12:45 A.M., pulse 106, temperature $99\frac{2}{3}^{\circ}$; vomited about a pint of dark colored matter; 4 A.M., pulse 114, temperature $100\frac{1}{4}^{\circ}$; 11:30 A.M., pulse 106, temperature 99° ; vomits; 12 P.M., bowels moved; 12:30, vomiting of mucus with bile; 6, pulse 110, temperature 100° ; vomited fetid matter, tinged with bile; bowels moved slightly and without pain; 7:40 P.M., pulse 108, temperature 99° ; 9:45, bowels moved without pain; 10:30, pulse 100, temperature $98\frac{1}{2}^{\circ}$. Up to this time patient has had but little disturbed sleep; at times delirious; tongue dry with a brown center. Bismuth gr. v., pepsine gr. x., every four hours. 1 P.M., beef tea, brandy, milk and quinine, by injection; 2:30, morphine and atropia; 6, beef, milk and brandy; 9, beef, milk and brandy; 11:30, morphine and atropia.

April 9. 1 A.M., beef tea, o.ss., milk o.j., brandy $\frac{1}{2}$ j.; 6, morphine and atropia hypodermically; 6:30, beef tea, brandy and milk; 10, morphia and atropia; 10:45, beef tea, brandy and milk; 3 P.M., stomach irritable; milk $\frac{1}{2}$ j., aqua calcis $\frac{1}{2}$ ss. every hour; 5, morphine and atropia; 10, morphine and atropia, hypodermically, brandy and water in connection with lime-water and milk; stomach less irritable.

April 10. 1 A.M., milk in large quantities with half ounces

lime-water; 4, lime-water, milk and brandy; no nausea. *Symptoms*—3 a. m., tongue moist, pulse 90, temperature 98°; has rested well during the night. 6 a. m., pulse 90, temperature 98°; milk and aqua calcis; desires food. 1 p. m., beef, bread and butter retained well, temperature normal, pulse 99.

April 11. 1 a. m., pulse 96, temperature 98°; did not rest well before this time; morphia and atropia were given with relief of symptoms. 8 a. m., pulse 90; temperature 98°. Egg and toast for breakfast; relished her food. 1:30 p. m., pulse 96, temperature 98°. 9:30, pulse 88, temperature 98°.

April 12. 7 a. m., pulse 90, temperature 98°. Rested well during the night. 2:30 p. m., pulse 100; temperature 99°.

April 13. 8:40 a. m., pulse 94; temperature 98°. Eggs, toast and tea; appetite good. 8 p. m., pulse 90; temperature 98 $\frac{1}{2}$.

April 14. Pulse 86; temperature 98°; rested well during the night. At 9 p. m. temperature 94°; pulse 90. Soreness about pedicle.

April 15. Pulse 84; temperature 98°. Slept well during the night; appetite good. Pedicle came off on the 16th, and patient went on to a rapid recovery. At present, June 2, 1876, she is enjoying as good health as could be expected. In the treatment of the pedicle little more was done than keeping the parts clean, applying carbolized glycerine at the time of each dressing. Drs. Jump and Richards remained with the patient from the time of the operation to the separation of the pedicle, which took place on the tenth day after the operation—for the success of which I am largely indebted to all who assisted me.

A CASE OF SUPPOSED UTERINE CANCER, IN WHICH A SPONGE WAS RETAINED IN THE VAGINA FOR TWO YEARS.

BY EDWARD W. JENKS, M. D.,

PROFESSOR OF DISEASES OF WOMEN, ETC., DETROIT MEDICAL COLLEGE.

I was summoned, not long since, to see a patient who was

supposed by her friends and medical attendant to have cancer of the uterus, from a sanguous vaginal discharge which had been profuse and offensive for over a year. It is but just to my friend, who called me in consultation, to say that he had formed no opinion of the case from physical examination, as he postponed that until I saw the patient with him.

The patient, Mrs. —, sixty-two years of age, stated that she had ceased menstruating twelve years previous; that she was the mother of several children, and had always possessed good health until the present difficulty. The discharge she said was not only very offensive, but exhausting and very irritating. Upon examination the external genitalia were seen to be deeply excoriated and the inner part of the thighs in a similar condition. Carrying a finger into the vagina, I could distinctly feel at the uterine extremity a soft immovable mass, unlike any morbid growth I had ever before encountered. I then inserted a speculum and saw that it was a sponge quite firmly held in position. A portion seemed almost encysted, so that the force required for its removal by dressing forceps tore it into pieces. As the sponge was removed the atrophied, uterine neck, and the vagina surrounding it, were seen to be ulcerated and bleeding surfaces.

The patient informed me that she had formerly been troubled with "falling of the womb," for which she had been in the habit of having sponges inserted; that the last one was put in by a physician two years before, which she was quite sure she had afterwards removed. Soon after this she began to have the offensive discharge which occasioned my visit. It is probable that she may have removed a portion of the sponge that was inserted, or may have removed none, but thought she had. Only for the peculiar condition of the neck of the uterus and the vagina, occasioned by the senile changes of these organs, it could be hardly possible for the sponge to be so firmly retained such a length of time in the superior portion of the vagina; and at no other time of life than after the menopause, could a foreign substance like a sponge be in constant apposition with the neck of the uterus for two years and produce such slight derangement. It is needless to add

that with the removal of the sponge the patient made a rapid recovery with no other treatment than the use of detergent vaginal washes.

A CASE OF SUPPOSED PIGMENTARY DEPOSIT IN
THE CORTICAL SUBSTANCE OF THE ENTIRE
ENCEPHALON.

BY A. W. HAGENBUCH, M. D.,

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Magdelene Fischer, German, aged twenty-four years, single, was admitted to the asylum June 3d, 1875, with acute mania, which she had had for seven weeks, although she was thought by her friends to have acted peculiarly for several months prior to this period. Upon admission she was well nourished; heart and lung sounds normal; she was violent and very refractory, refusing, although perfectly able, to walk to her ward. After a few days she became somewhat melancholic, but occasionally was very violent, once even attacking one of the attendants, fighting desperately. She gradually became very quiet, and would sit for hours in one position and speak very little. Occasionally she sang snatches from the operas. She soon subsided into a profound stupor, sitting for hours in one position and never speaking. After a few weeks she gradually grew worse, and about March 1st, 1876, she began voiding her feces and urine in bed. There was not a continuous dribbling of urine or discharge of feces, but perfect evacuations several times in the day. She would sit for a half day with her head resting on her knees, and had to be fed and cared for like a child. She took to bed about April 13th; her physiognomy was remarkable, her face was a perfect blank, her eyes had an expressionless look about them, such as is rarely seen; she reminded me very strongly of a pigeon after both cerebral hemispheres are removed. A loud noise in her immediate neighborhood would startle her; she would make one or more sudden, spasmoid movements, then gradually subside to her

former condition. She became very much emaciated. She seemed to be totally unconscious of pain, even a strong electric current would be born without the slightest manifestation of pain, although reflex movements seemed to be perfect, as was proven by irritating the soles of her feet; they would be immediately and spasmodically drawn upwards and removed from the cause of irritation. The case was regarded by me as a typical one of acute mania, terminating in complete dementia. The last few days of her life she had dysphagia; there seemed to be some paralysis of the pharyngeal muscles. During the acute attacks the temperature was 102° to 105° F.; during the intervals, 99° to 101° F.

She died May 2d, 1876. A *post mortem* examination was made 14 hours after death. The scalp was found very thin, and so distensible that the anterior flap might have been removed and the posterior one could have been easily stretched so as to take its place. The skull proper was thick — no irregularities upon its internal surface; dura mater very thick and pale; arachnoid about normal; pia mater very much thickened and congested, some of the bloodvessels having a tortuous course and resembling varicose veins. Weight of entire encephalon (including membranes) 43½ ounces. The external surface of the entire brain was very much darker than normally; it was almost black.

Upon removing a portion of the upper surface of the brain corresponding to the *centrum ovale minus*, the knife met with some resistance, producing a grating sensation to the hand, and with an audible sound. Particles of sandy substance had been deposited in the substance of brain. The cortical layers were almost black. Unfortunately the specimen was not examined microscopically. I am inclined to think the deposit was pigment. This deposit was found in the gray substance of the entire encephalon and spinal cord as low down as examined, about the fifth cervical vertebra, and sclerotic coats of both eyes. All the other internal organs were apparently healthy, with the exception of a small tubercular deposit in the apex of right lung.

THE USE OF CROTON CHLORAL HYDRATE IN PHOTOPHOBIA.

By P. OWEN-JONES, M.D.

(Read before the Chicago Medical Society, June 19, 1876.)

[Dr. Owen-Jones remarked in beginning that the cases here reported were treated in Guy's Hospital, London, under the direction of Mr. Bader.—ED.]

(1) Ann B., aged 18, suffering from syphilitic corneo-iritis of both eyes with photophobia, commenced to take grs. v. doses of croton chloral hydrate three times a day, on the 24th Dec., 1873. A solution of daturin (gr. j. to $\frac{1}{3}$ j. of water) one drop to be dropped into both eyes every ten minutes for an hour each evening. Eight days after the photophobia had greatly diminished, and on the twenty-third day, Jan. 16th, 1874, she was discharged cured.

(2) Mary C., aged 11, suffering from pannus with granulations and photophobia, commenced to take grs. v. of croton chloral hydrate three times a day, on Jan. 16th, 1874. A solution of daturin (gr. j.— $\frac{1}{3}$ j. of water), one drop twelve times in an hour each evening. On the seventh day there was no improvement, and the dose was increased to grs. x. three times a day. On the fifteenth day there was a very slight improvement in left eye only. The dose was increased to grs. xij. On the twenty-sixth day the drops were omitted and the dose increased to grs. xv. On the twenty-eighth day, there being no improvement, the medicine was omitted and the lids were touched with greenstone seven or eight times a day.

(3) Mary S., aged 19, suffering from syphilitic corneo-iritis with great photophobia, commenced to take grs. x. doses of croton chloral hydrate three times a day, on Dec. 24th, 1873. A solution of atropine (grs. ij.— $\frac{1}{3}$ j. of water) twelve drops in one hour each evening. On the thirteenth day the photophobia had almost subsided. On the nineteenth day the photophobia had entirely gone.

(4) Florence B., aged 8, suffering from syphilitic corneitis with epiphora and photophobia, commenced with grs. v. doses three times a day, on Jan. 13th, 1874. A solution of atropine (gr. j.— $\frac{1}{2}$ j. of water) six times in an hour each evening. On the fourth day there was a very marked improvement, which continued up to the twenty-fourth day, when a dense fog caused a return of the photophobia. On the thirty-second, patient was discharged cured.

(5) Celia S., aged 24, suffering from closed pupil, ciliary redness and great photophobia, trusion—1. Commenced with grs. x. doses three times a day, Jan. 13th, 1874. A solution of atropine (grs. iv.— $\frac{1}{2}$ j. of water) to be used morning and evening. The left eye was worse than right. On the fourth day there was a slight improvement in photophobia. On the tenth day patient was able to look at the light with only slight discomfort. On the fourteenth day there was no photophobia in right eye. On the eighteenth day the photophobia had ceased in both eyes.

(6) Mary D., aged 15, suffering from pannus, with granulations and photophobia, commenced to take grs. x. doses three times a day, a solution of atropine (grs. ij.— $\frac{1}{2}$ j.) to be used three times a day, Jan. 21st, 1874. On the second day there was a slight improvement. Drops omitted. On the nineteenth day there was a great improvement in photophobia. Dose increased to grs. x. four times a day. On the twenty-first day the dose was increased to grs. xv. four times a day. On the twenty-seventh day the photophobia had ceased and the medicine was omitted. The lids were ordered to be touched with greenstone three times a day.

(7) Ellen B., aged 7, suffering from corneitis with excessive photophobia, commenced to take grs. viij. doses three times a day, Feb. 5th, 1874. On the fourth day there was a marked improvement in photophobia. On the eighth day the photophobia suddenly returned as bad as at first. The medicine was continued for several days, but without producing any good result.

(8) Clara S., aged 15, suffering from corneo-iritis with excessive photophobia, so that it was necessary to keep her entirely

in the dark, commenced to take grs. x. four times a day, Feb. 10th, 1874. On the second day there was already a slight improvement. On the third day patient complained of a bad headache. On the sixth day the pain in head was better. Medicine was reduced to grs. v. There was a gradual improvement up to the twentieth day, when patient left the hospital.

(9) Mary B., aged 49, suffering from closed pupil with internal neuralgia of forehead, commenced to take grs. xv. doses three times a day. On the fourth day the dose was increased to grs. xx., but without producing any marked alleviation from pain.

If now we look at the results of these cases, we see that Nos. 1, 3, 4, 5 and 8 were markedly benefitted by the drug, and No. 6 to a great extent. These cases, Nos. 1, 3, 4, 5 and 8, were the subjects of well marked congenital syphilis. All the cases were the worst I could pick out from among the out patients attending at the hospital. It is right perhaps to state that most of these patients came from miserable dirty homes, where they were probably only half fed; so that the good food and nursing of the hospital may have had something to do with the result.

As regards the dose of the medicine, it will be seen that various quantities were given, the smallest being grs. v. three times a day, and the largest grs. xx., without producing, as far as I could detect, any unpleasant symptom. The only complaint was the exceedingly nasty taste of the drug, which was given combined with syrup of lemons, about $\frac{3}{4}$ ij. to $\frac{3}{4}$ j. of water, in which it was found to be more soluble than in water alone. In only one patient, No. 6, did it cause any feeling of sleepiness. Dr. Bader concluded, from the result of these cases, that it was only in diseases of the eye which were due to syphilis we could expect any marked and permanent benefit.

TWO CASES OF OVARIOTOMY.

BY A. REEVES JACKSON, A.M., M.D.,

SURGEON-IN-CHIEF OF THE WOMAN'S HOSPITAL OF THE STATE OF ILLINOIS; LECTURER
ON DISEASES OF WOMEN IN RUSH MEDICAL COLLEGE, ETC.

(Read before the Chicago Society of Physicians and Surgeons, June 12, 1876.)

CASE I.—*Polycystic Ovarian Tumor complicated with Ascites—Ovariotomy—Death from Exhaustion.*

Mrs. H., thirty-two years of age, married, and the mother of two children, the youngest twenty-two months old, rode a long distance on a cold day in April, 1872. She took a severe cold and noticed in two or three days an enlargement of the lower part of the abdomen, not greater on one side than on the other. Three months later, Dr. C. T. Cory, of Grant county, Wis., after examining the case, pronounced it one of ovarian dropsy. This opinion was subsequently confirmed by Dr. Darius Mason, of Prairie du Chien. Subsequently, in December, the case came under the care of Dr. J. B. Cory, of Patch Grove, Wis. He found the abdomen excessively distended, and fluctuation evident in every part. There was partial resonance in both flanks and in the epigastric region; dullness everywhere else; change of posture produced no change in this respect. The uterus was slightly prolapsed, otherwise normal. The patient suffered from dyspnoea, digestion was impaired, and she was greatly emaciated.

In order to give present relief, as well as to complete the diagnosis, the patient was tapped by Dr. Cory, through the abdominal wall, January 2, 1873. He removed fifty pounds of "clear, limpid, amber-colored fluid, free from albumen." After the removal of the fluid Dr. Cory failed to discover any tumor or sac. The patient recovered rapidly. The fluid reaccumulated slowly, but not to such an extent as to occasion distress.

April 1st, following, the patient discovered a tumor in the right iliac region about the size of an orange, hard and moveable. It grew rapidly, so that in two months it was as large

as a child's head, and reached almost to the umbilicus; by the last of August it had approached the edge of the ribs. At this time the uterus was drawn up so that the os could be reached only with much difficulty.

She now grew rapidly worse. She had several attacks of peritonitis, suffered greatly from dyspncea, had a quick pulse and lost flesh.

On the last of January, 1874, her symptoms were so distressing that she was again tapped, at her earnest solicitation. Six pounds of thick gelatinous amber-colored highly-albuminous fluid were removed. The operation was followed by a severe attack of peritonitis, which lasted eighteen days.

I was engaged to perform ovariotomy at the patient's home, and appointed February 25th, as the time. I arrived there very early on the morning of that day, and learned from Dr. Cory that on the evening of the 23d the patient had fallen asleep near an open window, and, that as a result of this act of imprudence she was now suffering from a very severe local peritonitis.

I found her in an exceedingly unfavorable condition. She had a good deal of pain in the left iliac region, attended with nausea and vomiting, tongue and skin dry, pulse 130, temperature 103° . I was very loth to operate under such unpromising circumstances, but as the operation appeared to offer the only possible chance of saving the patient's life, I agreed to submit the decision of the question to the medical gentlemen whom Dr. Cory had invited to be present. These were Drs. Darius Mason, John Conant, T. W. Howes, H. P. Gritner, F. R. Millard, and Thomas Chambers. The attending physician, Dr. J. B. Cory, and Louis Freidericks, medical student, were also present. On consultation with these gentlemen it was decided that the operation should be proceeded with, which was accordingly done.

The patient having been etherized, an incision three inches in length was made in the linea alba and quickly deepened to the peritoneum. When the bleeding ceased, the peritoneum was opened and several pounds of ascitic fluid escaped. The cyst, of a pearl-blue color, then came into view, and a prosta-

tic catheter passed over its surface showed the existence of tolerably dense adhesions on both lateral aspects. These were broken down and a large trocar pushed into the most prominent part of the cyst. Its contents were too viscid and dense, however, to flow through the cannula. The latter was therefore withdrawn, the opening in the cyst wall enlarged and the hand passed into the interior of the growth. The contents of the latter were then scooped out by the hand, the patient being at the same time turned upon her side in order to prevent any of the cystic fluid from entering the abdominal cavity. The tumor was found to be adherent by nearly its entire posterior surface to the intestines and pelvic walls. Many of these were separated by scissors, and in several places portions of the cyst wall were cut out and the inner portion peeled off, leaving the united peritoneal surfaces together. There was a great deal of hemorrhage, and much time was consumed in controlling it. The cyst was found to spring from the right ovary. The left ovary was also diseased and was removed. As it seemed almost inevitable that there would be some oozing of blood from the torn surfaces after the closure of the wound, a drainage tube of india rubber was placed behind the uterus leading from Douglass' cul-de-sac through the vaginal wall into the vagina. The wound was then closed with sutures of silver wire placed half an inch apart, and the dressing completed by adhesive strips, a compress of folded flannel, and a flannel bandage surrounding the body. The weight of the tumor was thirty-two pounds.

The operation lasted two and a half hours, and during its continuance the patient several times became very much depressed, and the pulse quite imperceptible at the wrist. At its conclusion she was placed in bed, had bottles of hot water about her person, and brandy was freely given.

At 2 o'clock P. M., half an hour after she was put to bed, her pulse was 140, small and thready. She did not rally at all. At 7 o'clock on the following morning, after a restless, sleepless night, her pulse was 150, respiration 10, and temperature 105°. She began vomiting a very dark, ropy mucus, and, sinking rapidly, died at 11 o'clock A. M.

CASE II.—*Polycystic Tumor of Right Ovary—Ovariectomy—Symptoms of Septicemia—Recovery retarded by Parotitis and Phlegmasia Dolens.**

H. G., a resident of Aurora, Ill., married, aged forty-nine years, consulted me March 1, 1874, relative to an enlargement of the abdomen, accompanied with great irritability of the bladder and urethra. She gave me the following history: Menstruation commenced at thirteen, the function being irregular down to the age of thirty-four, when she married. It then became regular, and continued so to appear until October last, when, after a few months of irregularity, it ceased altogether. About eighteen months ago she first noticed an enlargement of the abdomen. For the first year the swelling seemed to appear and disappear alternately, but during the past six months it has been permanent, and has steadily increased in size.

On examination, I found the abdomen tense and as large as at full term of pregnancy; there was no fluctuation and no perceptible tumor; the uterus was in a state of extreme retroversion. During the next four months her strength rapidly failed and her size greatly increased. In July I took her to Chicago for consultation with Dr. Jackson. He decided that there was a tumor, probably ovarian, and advised waiting until further development should make operative interference necessary, when ovariectomy should be performed.

She continued to enlarge, and the lower extremities became œdematosus; she also complained of pain in the left side, referred to the region of the heart and left lung.

On October 27th, in consequence of her extreme suffering, I removed, by tapping, sixteen pounds of fluid having the color and consistence of new cider. On the withdrawal of the fluid, a tumor extending from the bones of the pelvis on the right side across the abdomen to within two inches of the bones on the left side, was clearly perceptible. Its density varied in different parts, being softest on the left side. After

* The account of this case is furnished by the attending physician, Dr. Jennie G. Brown, of Aurora, Ill.

the operation the uterus resumed its normal position, and the patient was much relieved for several weeks. The fluid reaccumulated, however, and ovariotomy having been decided upon, the operation was performed on December 10th, 1874, by Dr. Jackson, in the presence, and with the assistance of Drs. Jennie G. Brown, J. H. Etheridge, W. C. Lyman, Sibelia F. Baker, Alex. Sterl, R. J. Patterson, Huntley, Brigham, Bartlett, Hawley, Hurlbut and Robbins.

The Operation.—The patient having been fully anaesthetized with the bichloride of methylene, administered by Prof. Etheridge, an incision was made in the linea alba, extending from a point about two inches below the umbilicus to one about the same distance from the pubis. This was deepened until the peritoneum was brought into view. All bleeding having ceased, the peritoneum was lifted by a tenaculum and slit upon a director nearly the entire length of the external incision, exposing the wall of the cyst. Adhesions were then searched for by means of a sound swept over the surface of the tumor, and afterwards by the hand previously dipped in artificial serum,* kept at a temperature of 98°. Several were found on the front and lateral aspects of the tumor, and being slight, were broken down by the hand, but some more extensive and of a firmer character, discovered posteriorly, were left to be dealt with subsequently. A trocar was now passed into the upper part of the most prominent cyst, giving exit to a dark amber-colored fluid, closely resembling that which had previously been removed by the tapping. The first cyst having been evacuated, the trocar was re-introduced through the cannula and passed onward, tapping successively others, the contents of each presenting differences in color and consistence. The tumor not being sufficiently reduced in size by this means, the cannula was withdrawn and the opening into the cyst wall enlarged sufficiently to enable the operator to introduce his hand into the interior of the tumor; he then broke down the intervening walls between a number of other

* Made by mixing the whites of two eggs with a tablespoonful of common salt, and adding two quarts of water.

cysts, and permitted their contents to escape. This, too, failed to lessen the size of the growth sufficiently to allow its extraction, and the incision was prolonged to the left of, and about one inch above, the umbilicus. The tumor was carefully brought through the incision, and discovered a number of adhesions attaching it to the intestines and omentum. These were separated by fingers and scissors, and the tumor was finally only held by its pedicle, which was seen to arise from the broad ligament of the right side. The pedicle was temporarily clamped and the cyst cut away; it was subsequently transfixated by a needle in a fixed handle at a point about an inch from its cut extremity, its two halves tied separately with strong silk ligatures, the ends of which were cut off closely, and the pedicle dropped back. The left ovary was found to be diseased, and adherent to the cyst. It was removed. The bleeding points of the divided adhesions were secured with fine silk ligatures, five in number, their ends cut short.

The appearance and condition of the uterus were very peculiar. It was of normal size and its fundus was studded with a number of subperitoneal growths varying in size from a grape-seed to that of a large currant, rough and unsymmetrical, and as hard as stone. They seemed to be small fibroids which had undergone calcaeous degeneration. They were not disturbed.

A drainage tube of india rubber was passed from Douglas' cul-de-sac through the posterior vaginal wall, and left *in situ*. The abdominal cavity was carefully cleansed of blood and cystic fluid by repeated washings of warm carbolized water, and sponged until quite dry. A flannel compress, wrung out of warm water, was placed over the intestines while the needles were passing through the lips of the wound, which was closed with nine silk sutures. The dressing was completed by broad strips of adhesive plaster, over which was placed successively a compress wet with carbolized water, and a layer of cotton batting, the whole being finally surrounded with a flannel bandage.

The patient was then placed in a well-warmed bed, with

hot water bags near her feet, and lightly covered with blankets. She soon reacted from the effects of the operation and the anaesthetic. The latter acted admirably. The patient was under its full influence two hours and twenty-six minutes. She had no vomiting during or after the operation, although for several days there was much nausea.

Progress.—Dec. 8, p. m. Pulse 88, skin moist, temperature 98°, comfortable.

12th, 10 a. m. During the past two days the pulse has steadily increased to 130, temperature remains at 98°. The skin has been moist, urine abundant, and the patient has had but little pain. Bloody fluid has steadily passed through the drain tube. She is now restless, weary, and has a good deal of nausea; seems better when deprived of all fluids. She has had since the operation enough opium, either by the mouth or rectum, to control pain and permit sleep.

13th, 3 p. m. Has been troubled to-day with eructation of gas; has less nausea, however. Pulse 120, temperature 98°, skin hot and dry, head feels light and dizzy.

14th, 5 p. m. Dr. Jackson came and removed the sutures this morning. The wound was found entirely closed. There has been no distension of the bowels, and gas passes freely *per rectum*. Patient complains of weariness and numbness. Pulse varied during the day from 108 to 120; temperature 98°.

15th, 10 a. m. Pulse 128, temperature 97°. Face flushed, head dizzy, sweet taste in the mouth and sweetish odor of breath; sleep disturbed with unpleasant dreams, and mind dull and cloudy on waking. The drain tube not seeming to act well, I removed it and found the upper portion filled with bloody pus; no fluid followed its withdrawal.

16th. Pulse 128, temperature 96°. Dr. Jackson came today and found a hard mass occupying Douglas' space. He passed a curved trocar and cannula into it, and gave exit to one pint of dark bloody offensive fluid, subsequently washing out the part through the cannula with warm carbolized water. This procedure was followed by improvement, the patient becoming at once bright and cheerful. The temperature sank to 94°, and the patient began to perspire freely.

18th. The septicæmic symptoms and the pelvic hardness returning, Dr. Jackson was again sent for, and last night again drew off about a pint of the same offensive bloody fluid as before, and this time left the cannula *in situ*. The patient seemed greatly relieved; but this evening the colon is much distended with gas. Pulse 116, temperature 96°.

19th. Pulse 100, temperature 96°, skin moist, appetite good. Bloody fluid, with fibrinous flakes, pass through the cannula, and two or three times daily the pelvic and abdominal cavities are washed out through the tube. The tympanitic distension is relieved by the use of an enema.

25th. Progress has been steady during the past five days. The pulse has varied from 88 to 100, and the temperature has gradually risen from 96° to 98°. As the washings from the abdominal cavity have returned perfectly clear for two days past, I removed the cannula to-day. Patient calls my attention to a swelling of the left parotid gland.

31st. The glandular swelling has been extreme, but is now subsiding.

Jan. 3d. The glandular swelling has disappeared. Patient much better. She sat up in bed to-day, the first time since the operation, and sang.

8th. The abdominal wound has been inflamed and discharged pus for the past ten days, and to-day the pedicle ligature escaped from the sinus in its lower portion.

Feb. 11th. To-day the patient sat up in a chair. She seemed quite strong. Some pus still discharges through the opening in the vaginal wall left by the cannula.

27th. Is walking about her room, and seems quite convalescent.

March 3d. Another set-back. Since early this morning the left leg and foot have been rapidly swelling, and the pulse has risen from 100 to 128. The limb is not very painful; it pits on pressure, and is tender along the course of the femoral vein. The urine is turbid and scanty. She has, clearly, phlegmasia dolens.

20th. The swelling has subsided. Patient's appetite has returned, and the abdominal wound has entirely healed.

May 15th. She now does light work about the house, takes long drives into the country, and has gained fifteen pounds in weight.

Remarks.—There are several noteworthy features connected with this case. One is the occurrence of very decided symptoms of septic poisoning, and their prompt relief on the removal of the pelvic collection of decomposed bloody fluid; showing clearly the necessity, in all cases in which there is reason to apprehend any effusion of blood after ovariotomy, of providing at the time for efficient drainage; or, if this be not done, of promptly reaching the interior of the abdominal cavity either by vaginal puncture or reopening of the abdominal incision, for the double purpose of evacuating septic material and of subsequent intra-peritoneal washings. There can be no doubt but that this patient would have died had the accumulation of fluid in the pelvis been permitted to remain. The rubber tubing employed in this case, although it had a calibre of $\frac{1}{4}$ inch, and was pierced with numerous openings $\frac{1}{2}$ inch in diameter was quite inefficient for its intended purpose. Its fenestra soon became clogged, and the small amount of fluid which was transmitted by it gave an erroneous impression as to the actual condition of the parts within. Another objection to rubber in these cases is, that unless the tubing be of large size—necessitating the use of a correspondingly large trocar for its introduction—its walls are likely to be compressed at the point where it passes through the vagina. A glass or metal tube, properly curved, reaching from the middle of Douglas' space to half way through the vagina, would, I think, be found much more efficient and manageable. It could be prevented from passing into the abdominal cavity by a tightly-fitting collar of india rubber slipped upon it, and, if desirable, a piece of tubing could be attached to its distal extremity. The tube itself should not project beyond the vulva, because of its liability to be caught in the bedding, and thus, or in other manner, pulled from its place.

Again, the case is remarkable for the very unusual character of the complications attending convalescence. These were

a distinct attack of unilateral mumps, and a well developed phlegmasia dolens.

Finally, the temperature of the patient throughout was notably low. An hour after the operation it was 98° , and it remained without variation at this point during the first six days. It then fell to 94° , and, on the following day rose to 96° ; keeping thus for nine days. It rose on the sixteenth day to 98° , simultaneously with the attack of parotitis, but at no time did it rise above a normal point.

MECHANICS OF UTERINE DISPLACEMENTS.

By A. HOWARD SCOTT, M. D., MANSFIELD, ILL.

(Read before the Central Illinois Medical Society, May 2, 1876.)

I shall endeavor first to give the dynamics of uterine displacements, tracing out separately the mechanism of each, so that we may obtain clearer views of the indications to be met by mechanical means in our management of them.

There are three necessary conditions to constitute a healthy action of the uterus: 1st, A normal circulation and innervation; 2d, a normal structure; 3d, a normal position. These inseparable conditions constitute a tri-link chain, absolutely necessary for the existence of its healthy action.

All uterine pathological processes must take their origin in one or the other of the links of this physiological chain. If it start in the first link with disordered circulation and innervation, this may lead to abnormal structure (hyperplasia), and this abnormal structure may eventuate in abnormal position. If the morbid process start in the second link, with subinvolution following parturition, this may affect either the first or the third link, in the one case giving hyperplasia, in the other displacement. And finally, if the pathological process take its origin in the third link, with displacement resulting from any of the various forces usually producing it, this must of necessity soon affect the circulation and innervation, which later may eventuate in change of structure,

Before discussing the dynamics of displacements, we must briefly examine uterine statics, or the physiological forces in a state of equilibrium.

If we remember that the inherent weight of the uterus and superadded weight of abdominal viscera, constitute a force tending to carry the uterus lower in the pelvis, and that the vagina and the various ligamentous supports constitute opposing forces, and that when there is an equilibrium between these forces the uterus is in its normal position, we may express the statical condition by the following equation : Weight of uterus + weight abdominal viscera = resistance of vagina + resistance of ligaments. Now it is evident that any change of the one side of this equation, without a corresponding change of the other, must destroy its equality, giving as a result either an ascent or descent, or an anterior or posterior displacement of the uterus. Those proximate causes and favoring conditions usually enumerated by authors in their etiological classifications, we shall consider as so many physico-pathological forces, and arrange them thus:

Direct Forces.—Subinvolution, hyperplasia, uterine tumors, fluids contained in uterus, pregnancy, abdominal tumors, ascites, abscess, haematocele, distended bladder, distended rectum, tight lacing, heavy skirts, muscular efforts.

Indirect Forces or Diminished Resistance.—Ruptured perineum, weakened vaginal wall and sphincter, weakened uterine ligaments, weakened levator ani and perinei muscles, tissue change of cervix.

To properly correlate these various forces and to trace out their reciprocal actions and relations in the successive pathological and physical changes, constitutes one of the most complex problems in the science of etiology, we can best approximate the solution of this problem by studying in detail these various displacements. We shall therefore consider only the more important of them, in the following order: 1st, Pro-lapsus; 2d, Versions; 3d, Flexions.

Before proceeding further it becomes necessary at least to enumerate the various uterine supports, which we will divide

into two classes: 1st, Those connected with the cervix; 2d, Those connected with the body.

In the first class we enumerate the utero-sacral and the utero-vesical ligaments, together with the vagina, the most important and unyielding of all the supports, being so intimately connected by areolar tissue to the rectum and bladder as to involve these viscera in its descent. They act as guys to the cervix as well as support to the corpus. In the second class we enumerate the broad and the round ligaments, together with the bladder, as guys only to the body of the uterus, they offering no resistance to the descent of the uterus until procedentia is attained.

So delicately is the uterus poised in the pelvic cavity that each act of inspiration give a transitory physiological prolapsus. Need we then be surprised that a pathological prolapsus should be of such frequent occurrence? That physiological prolapsus peculiar to the first few months of utero-gestation, affords the best type by which to study the mechanism of the displacement. Here we have the increased weight of the uterus acting as a vertical force, together with the supports physiologically relaxed, combining to bring about the given result, prolapsus. This teaches that it requires little or no additional force to be added to the normal weight of the uterus and abdominal viscera to bring about prolapsus if the supports be enfeebled. Then it matters not what that super-added force may be, whether fetus, tumor, hyperplasia, sub-involution, ascites, tight lacing or heavy skirts, the results will be the same if the supports be weakened; nay, prolapsus may occur in spite of the normal resistance of supports.

Then we may formulate the following as the mechanism of prolapsus: A force or combination of forces acting with or upon the uterus vertically, forcing it lower in the pelvis — this force or combination of forces being greater than the combined resistance of vagina, utero-sacral and the utero-vesical ligaments, together with the resistance of the round and broad ligaments when the descent amounts to procedintia. So that we have as a physico-pathological result increased length of all of the ligaments, the vagina being prolapsed or shortened.

We may express this displacement by the following formula, x denoting the super-added direct force, whatever it may be, thus: Weight uterus + weight abdominal viscera + x = resistance vagina + resistance of all the ligaments.

In retro-version the bladder and rectum play important parts. A distended rectum thrusts the cervix forward, putting the utero-sacral ligaments on the stretch, and if a replete bladder has already elongated the broad ligaments, we have a physical condition of the proper ligaments that will give a retroversion, if the same direct forces be in operation as in prolapsus. Then we formulate for retroversion the following: A combination of vertical force or forces with a horizontal force or forces, acting jointly with or upon the uterus, giving a resultant oblique force which carries the fundus backwards and downwards, dislocating cervix and top of vagina forward, this complex force or forces being greater than the resistance of round and utero-sacral ligaments, which we may likewise express by a formula, thus: Weight of uterus + weight of abdominal viscera + distended rectum + distended bladder + x = resistance of round ligaments + resistance of utero-sacral ligaments. Observing similar aetiological conditions, we may express the equation of ante-version thus: *Weight of uterus + weight viscera + x = resistance of utero-vesical ligaments.*

Flexions, as a rule, are the sequelæ of versions; this I have frequently seen demonstrated. The uterus in retroversion lies across the recto-vaginal septum, and in ante-version it lies across the vesico-vaginal septum. This change of position soon induces a change of circulation and innervation, which eventuates in tissue change of the organ, rendering it soft and spongy. The organ being in this condition it requires no effort of the imagination to see that if the same vertical forces be acting on the organ, they will still further depress the fundus and cervix, thus bending it across the septum, giving a retro-flexed or ante-flexed uterus, as the case may be. Authors usually claim cervical tissue change as the determining cause of flexions. The organ being soft and spongy from the nature of this change, the same forces that would tend to give a version, would give a flexion if the cervical support be firm.

Then for flexions we have the same formula as for versions, except that in flexions the resistance of the cervix is less than the resistance of the cervical ligaments. For retro-flexion we express it thus: Displacing force > resistance of cervix + resistance of round ligaments. For ante-flexion: Displacing force > resistance of cervix.

Then, to recapitulate, we will group together these formulas, in order to show at a glance the supports at fault in these respective displacements. For brevity we use the initials only of previous formulas:

Normal Uterus.—Wt. U. + Wt. A. V.=resistance vagina + resistance of all ligamentous supports. (x=cause.)

Prolapsus.—Wt. U. + Wt. A. V.+x>resistance vagina + resistance of all ligaments.

Retroversion.—Wt. U. + Wt. A. V.+distended bladder + distended rectum + x>resistance round ligaments + resistance utero-sacral ligaments.

Ante-version.—Wt. U. + Wt. A. V.+x>resistance of utero vesical ligaments.

Retro-flexion.—Wt. U. + Wt. A. V.+x>resistance round ligaments + resistance of cervix.

Ante-flexion.—Wt. U. + Wt. A. V.—x>resistance of cervix.
These formulæ give us clear views of the ligaments at fault, and thus point out the indications to be met in the employment of mechanical supports. Before considering these supports, I will make a few remarks on the general management of these cases. The first indication to be met, will be to remove those forces and determining causes that we have enumerated in our etiological classification. The second indication will be to restore the dislocated uterus to its normal position, and retain it there by appropriate mechanical contrivances until the uterine supports regain their normal length and tone. These second indication we shall only consider in this article. The means of reducing a displaced uterus are so well understood that I shall not consider them, but at once proceed to a consideration of mechanical supports.

Pessaries have been used from time immemorial. Their almost innumerable varieties teach plainly the unsatisfactory

nature of all such supports as have hitherto been devised. Though this is in a great measure owing to the employment of pessaries before the pathological conditions associated with the displacement have been removed by appropriate means, yet much of the difficulty has been, I apprehend, in not having properly constructed instruments—*instruments having an eye to the supports at fault and to an objective cure.* The “coming pessary” must have a regard for these things—one that will not distend the vagina nor chafe, and will at the same time retain the uterus in its normal position.

The most philosophical instrument yet devised for prolapsus uteri is, undoubtedly, the stem surmounted with a cup to receive the cervix. It fills the indications with the least distension of vagina; but it is objectionable, practically, because the patient is liable to place the cup in the anterior or posterior cul-de-sac, as over the cervix, and may thus do themselves incalculable injury and unjustly blame the instrument for it. On this account a stem surmounted by a globe or pear shaped body would be safer in the hands of the majority of women, and generally give good results. All stem pessaries, however, are liable to chafe the posterior fourchette and the labia majora; yet by giving a proper curve to the stem, and a little patience on the part of wearer, this objection may in time be overcome. But if a stem instrument cannot be tolerated, then employ Hodge’s closed lever, the elastic ring or hard rubber disk-pessary. The latter is an instrument generally tolerated well by the vagina, and usually gives good results in this displacement, yet it is objectionable in distending the vagina too much. We should have an eye to the vagina regaining its normal calibre, as well as the ligaments regaining their normal length, in our treatment of all displacements, but of this one especially.

In retroversion the round and utero-sacral ligaments are chiefly at fault, both being elongated. The indications here are to carry the cervix upwards and backwards, throwing the fundus forward, and to keep them thus until the utero-sacral and the round ligaments regain their normal tone and length. The most philosophical instrument for this purpose, that I

have yet seen, is the pessary of Schultze, that I found described by Schroeder in his treatise on diseases of the female sexual organs. The short curve of this instrument presses against the anterior face of the cervix and keeps it well back, without putting the utero-sacral ligaments to further stretching, a thing we should avoid. This instrument, modified by a sub-pubic curve, is much improved. Should this intrument not be tolerated, I should then employ a stem surmounted by a globe or pear shaped body, adjusted in front of cervix (not the corpus). Those so-called retroversion pessaries, that carry the cervix backward by stretching the posterior vaginal wall, and exert a leverage action through the fornix vagina, I consider unphilosophical, if not injurious. The facts in this displacement are, that the posterior vaginal wall and utero-sacral ligaments have already been stretched to their utmost in the forward movement of the cervix. The surgeon, in his efforts to radically cure this displacement, shortens the posterior vaginal wall, the very opposite effect to that accomplished by one of the so-called retroversion pessaries.

In ante-version the utero-sacral and round ligaments both become shortened as a result of this displacement. The indication then is to lengthen them both by carrying the cervix forwards and the fundus upwards and backwards. There is no means yet devised to meet the indications philosophically, without putting the already elongated utero-vesical ligaments to a further stretching, yet we are justified in doing so in order to effect an elongation of the round ligaments. Then the most appropriate instrument to effect this, I think, is Thomas' modification of the Cutter pessary. It has this advantage over Thomas' ante-version pessary, the patient can adjust and remove it herself. After having worn it sufficiently long to effect an elongation of the round ligament, then use the stem and ball pessary, adjusted behind the cervix, so as to throw it forward and give the utero-vesical ligaments opportunity to contract, at the same time employing a truss-like pad, pressing the hypogastrium just above the symphysis pubis, to prevent any forward inclination of the uterus. This procedure usually gives gratifying results.

In flexions the round ligaments are chiefly at fault (all the other ligaments being normal, or nearly so), they being elongated in retro-flexion and shortened in ante-flexion. The indications in the one case being to carry the fundus upwards and forwards, in the other to carry it upwards and backwards, and so retain it, if we can, until the round ligaments regain their natural length and tone. In flexions the so-called retroversion and ante-version pessaries are more appropriate and philosophical than they are in those displacements that their respective names indicate; but they all are palliative, not curative. We must first try to effect a straightening of the flexion; this we can often accomplish by a judicious employment of the sponge tent, after the plan so well described in the January number of the *American Journal of Medical Science*, by Dr. Ellerslie Wallace. I employed the sponge tent for this purpose ten years ago, and succeeded in relieving permanently one of the worst cases of retro-flexion I ever saw, accompanied with the most agonizing obstructive dysmenorrhoea. After having straightened the flexion, whilst the cervix is yet soft and spongy, employ any of the various ante-version and retroversion pessaries usually employed to elevate the fundus, until the round ligaments regain their lost tone and length. I have had no experience with the intra-uterine stem pessary for straightening flexions, as described and advocated by Schroeder, in his treatise on female sexual organs; yet I believe it to be one of the very best of instruments for a limited class of cases, those having no inflammatory complications.

For those cases of flexion with a long cylindrical cervix, the pessary invented by Dr. Hurd, of Alabama, is highly commended by gynaecologists as giving good results. I have never as yet employed it. I regret that time will not allow me to discuss further these flexions: to do them justice a separate monograph should be written.

No matter what instruments we may employ in these various displacements, we should keep a close supervision over them, lest by pressure or chafing they do serious mischief. The cold vaginal douche should be employed freely morning and evening so long as the instrument is worn. Should at

any time the uterus or vagina become intolerant of the instrument, remove it and employ tampons medicated with carbolic acid and glycerine, after the plan of Dr. T. G. Thomas, N. Y., when, after a few days, the instrument may again be resumed.

IMPRESSION PRODUCED ON THE SKIN BY DIFFERENT HEATED LIQUIDS.—(Bloch. *Révue Medico-Photographique. Times and Gaz.*, 1876.) M. Bloch has communicated to the Société de Biologie the results of his experiments, which show that liquids become burning at very different temperatures. He takes as a term of comparison the thermometrical degree which allows of the immersion of the hand during two minutes without producing great pain. He finds that this is 48° C. for mercury, 49° for water and for solution of tannin, 51° for solution of carbonate of soda, 52° for alcohol and for milk, 55° for essence of turpentine and starch-paste, 57° for glycerine, 60° for oil, and 65° for beef-fat. He explains most of the differences by the greater or less facility with which imbibition by the epidermis takes place, and especially those observed in aqueous solutions and fatty bodies. This hypothesis cannot apply to mercury, and its action is probably explained either by its great conductibility, or by the pressure in virtue of its density which it exerts on the immersed part—a pressure which renders the contact closer and the propagation of caloric easier.

THE MORTALITY OF SURGICAL OPERATIONS IN THE UPPER LAKE STATES, COMPARED WITH THAT OF OTHER REGIONS.

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(Continued.)

AMPUTATION OF THE THIGH.

This important operation furnishes us the following list of cases in the Lake States:

TABLE VIII.
AMPUTATION OF THE THIGH.

No. An- drews Sur. Rec	OPERATOR.	REASON FOR OPERATION.	COMPLICATIONS.	OPERAT'N COND.	TIME TO OPERATION.	RESULT.	TIME TO DEATH OR RECOVERY.
5471	Dr. E. Andrews	16 Protrusion of bone after prev. amput.		Re-a. m. 3 Good	Secondary	Recovered	9 days
	E. W. Lee	22 Comp. fract. of leg		Flap low 3 Good	Primary	Died	Hospital
	"	10 " "		Flap low 3 Good	Primary	Recovered	3 weeks
8680	E. Andrews	9 Leg crushed by cars		Lower 3d Bad	Primary	Died	Private
7725	"	30 Catarious knee		Flap. m. 3 Good	Primary	Recovered	Hospital
7727	"	30 " "		Lower 3d Med. 8	Primary	Died	Private
7722	Not stated	64 Comp. fract. thigh		Lower 3d Med. 10	Primary	Recovered	6 days
	S. S. Pedal	64 Comp. fract. thigh		Mid. 3 crt. Good	Primary	Recovered	10 days
	"	None		Mid. 3 crt. Good	Primary	Recovered	13 years
775	Thos. Lacy	Disease of knee		Flap. low 3 Good	Primary	Recovered	6 days
1612	E. Andrews	17 Gangrene from injury		Flap. low 3 Good	Primary	Recovered	11 days
1653	"	40 Comp. fract. of knee		Flap. low 3 Good	Primary	Recovered	11 days
5688	"	Knee crushed by timber		Flap. low 3 Good	Primary	Recovered	11 days
	J. S. Sherman	None		Flap. low 3 Good	Primary	Recovered	11 days
	"	Caries of knee		Flap. low 3 Good	Primary	Recovered	11 days
1389	E. Andrews	36 R. R. accident, drunk		Crushed thigh and op. leg	Primary	Died	1 hour
6397	"	50 Comp. fract. leg		Opposite knee bruised	Primary	Recovered	10 weeks
	M. Gunn	50 Semile gangrene		Flap. low 3 Med. Secondary	Primary	Recovered	Hospital
	R. Isham	Comp. fract. of femur		Flap. low 3 Med. Secondary	Primary	Recovered	Private
	L. Conant	50 " "		Flap. low 3 Med. Secondary	Primary	Recovered	Hospital
	H. A. Johnson	40 Chronic inflam. of knee		Flap. low 3 Med. Secondary	Primary	Recovered	7 weeks
	E. Andrews	Crushed knee and hemorrhage		Flap. low 3 Med. Secondary	Primary	Recovered	Hospital
	J. W. Freer	38 Cancer of knee		Flap. low 3 Med. Secondary	Primary	Recovered	48 hours
	G. Ammerman	25 Comp. and commin. fract. of leg		Flap. low 3 Med. Secondary	Primary	Recovered	1 hour
	"	7 Wounds op. limb & shock		Flap. low 3 Med. Secondary	Primary	Recovered	Hospital
	A. Fisher	10 Cancer of tibia		Flap. low 3 Med. Secondary	Primary	Recovered	10 weeks
	"	19 Caries of knee and mortl. of leg		Flap. low 3 Med. Secondary	Primary	Recovered	7 weeks
	"	25 " "		Flap. low 3 Med. Secondary	Primary	Recovered	7 weeks
	"	8 Freezing of leg		Flap. low 3 Med. Secondary	Primary	Recovered	7 weeks
	"	38 Chronic inflam. of knee with caries		Flap. low 3 Med. Secondary	Primary	Recovered	7 weeks
	"	30 " "		Flap. low 3 Med. Secondary	Primary	Recovered	7 weeks
	"	20 Knee joint nearly severed with ax		Flap. low 3 Med. Secondary	Primary	Recovered	7 weeks
	"	40 Gunshot wound of knee joint		Flap. low 3 Med. Secondary	Primary	Recovered	7 weeks
	H. Hyde	41 Comp. and commin. fract. leg		Flap. low 3 Med. Secondary	Primary	Recovered	2 mos.
	J. H. Hollister	7 Knee crushed by car wheel		Flap. low 3 Med. Secondary	Primary	Recovered	2 mos.
	E. Owens	"		Flap. low 3 Med. Secondary	Primary	Recovered	Hospital

TABLE VIII.—Continued.

RECAPITULATION.

	CASES.	DIED.	PER CENT. MORTALITY.
Total of all kinds	76	18	24
Traumatic, primary, upper 3d	5	2	40
" intermediary or secondary upper 3d	1	1	
Pathological, upper 3d	2	0	
Traumatic, primary, middle 3d	4	3	
" intermediary and secondary combined, middle 3d	5	1	
Pathological, middle 3d	7	2	
Traumatic, primary, lower 3d	18	5	28
" intermediary and secondary combined, lower 3d	9	3	33
Pathological, lower 3d	22	0	0
Hospital cases	20	6	30
Private practice	54	11	20

There is on record in the literature of surgery a prodigious mass of cases of amputation of the thigh, but, unfortunately, most of them are so destitute of details that they cannot be properly classified. Generally there is no statement in what portion of the thigh the operation took place, and often the essential distinction into primary, secondary and pathological cases is ignored. The statistics of the upper two-thirds are especially meagre.

AMPUTATION UPPER 3D OF THIGH ABROAD, TRAUMATIC PRIMARY.

AUTHORITIES.	CASES.	DIED.
Rept. Boston City Hosp., Dr. Cheever	11	11
Mass. Gen. Hosp. Rept., 1871	13	7
Dr. Herrgolt, Siege of Strassburg, 1870-71	2	1
Dr. Nunneley, Leeds Gen. Infirmary	9	2
Dr. E. Warren's Surg., p. 395, Confed. Army	5	3
Totals.....	40	24
Mortality abroad, 60 per cent.		

AMPUTATION UPPER 3D OF THIGH ABROAD, INTERMEDIARY AND SECONDARY COMBINED.

AUTHORITIES.	CASES.	DIED.
Circular No. 3, Surg. Gen. U. S. A.....	7	2
Dr. Herrgolt, Siege of Strassburg, 1870-71.....	6	5
Dr. E. Warren's Surg., p. 395, Confederate Army.....	5	1
Totals.....	18	8

Mortality abroad, 44 per cent.

AMPUTATION UPPER 3D OF THIGH ABROAD, PATHOLOGICAL.

AUTHORITIES.	CASES.	DIED.
Circular No. 3, Surg. Gen. U. S. A.....	3	1
Rept. Bost. City Hosp., Dr. Cheever.....	2	1
“ Mass. Gen. Hosp., 1871.....	15	4
“ U. S. Marine Hosps., Dr. Woodworth.....	1	0
Leeds Gen. Infirmary, Mr. Nunneley.....	9	2
Totals.....	30	8

Mortality abroad, 27 per cent.

AMPUTATION MIDDLE 3D OF THIGH ABROAD, TRAUMATIC PRIMARY.

AUTHORITIES.	CASES.	DIED.
Circular No. 3, Surg. Gen. U. S. A.....	2	1
Rept. Boston City Hosp., Dr. Cheever.....	4	4
“ Mass. Gen. Hosp., 1871.....	13	6
Dr. Herrgolt, Siege of Strassburg, 1870-71.....	1	1
Dr. E. Warren's Surg., p. 395, Confederate Army U. S.	13	4
Totals.....	33	16

Mortality abroad, 48 per cent.

AMPUTATION MIDDLE 3D OF THIGH ABROAD, TRAUMATIC, INTERMEDIARY AND SECONDARY COMBINED.

AUTHORITIES.	CASES.	DIED.
Circular No. 3, Surg. Gen. U. S. A.....	4	1
Rept. Boston City Hosp., Dr. Cheever	4	1
“ Mass. Gen. Hosp., 1871	7	3
Dr. Herrgolt, Siege of Strassburg, 1870-71	9	8
Dr. E. Warren's Surg., p. 395, Confederate Army U. S.	15	10
Totals.....	39	23

Mortality abroad, 59 per cent.

SURGICAL OPERATIONS IN UPPER LAKE STATES. 801

AMPUTATION MIDDLE 3D OF THIGH ABROAD, PATHOLOGICAL.

AUTHORITIES.	CASES.	DIED.
Circular No. 3, Surg. Gen. U. S. A.....	4	1
Rept. Boston City Hosp., Dr. Cheever	4	1
“ Mass. Gen. “ 1871.....	47	10
“ Rostoch “	1	0
Totals.....	56	12

Mortality abroad, 22 per cent.

AMPUTATION LOWER 3D OF THIGH ABROAD, TRAUMATIC, PRIMARY.

AUTHORITIES.	CASES.	DIED.
Circular No. 3, Surg. Gen. U. S. A.....	6	3
Rept. Boston City Hosp., Dr. Cheever	13	10
“ Mass. Gen. Hosp., 1871	35	12
Dr. Herrgolt, Siege of Strassburg, 1870-71.....	2	2
Dr. E. Warren's Surg. Confederate Army.....	27	10
Totals.....	83	37

Mortality abroad, 45 per cent.

AMPUTATION LOWER 3D OF THIGH ABROAD, INTERMEDIARY AND SECONDARY COMBINED.

AUTHORITIES.	CASES.	DIED.
Circular No. 3, Surg. Gen. U. S. A.....	3	0
Rept. Boston City Hosp., Dr. Cheever	4	1
“ Mass. Gen. Hosp., 1871	8	6
“ U. S. Marine Hosp.....	1	0
Dr. Herrgolt, Siege of Strassburgh, 1870-71.....	1	1
	43	28
Totals.....	60	36

Mortality abroad, 60 per cent.

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AMPUTATION LOWER 3D OF THIGH ABROAD, PATHOLOGICAL.

AUTHORITIES.	CASES.	DIED.
Circular No. 3, Surg. Gen. U. S. A.....	2	0
Rept. Boston City Hosp., Dr. Cheever.....	7	2
" Mass. Gen. " 1871.....	101	19
" Rostoch ".....	3	0
" British Army.....	2	1
* Glasgow Infirmary.....	92	19
* St. Thomas Hosp., 1835-40.....	13	4
* Univ. College Hosp., 1843.....	54	10
* Hussey.....	55	10
* James at Exeter.....	119	10
* Cases in Med. Times and Gazette, 1851-57.....	54	9
* Addenbrooke's Hosp., Cambridge.....	92	17
* St. George's Hosp., 1866.....	12	6
* London Hosp., 1854-57.....	169	38
* Provincial Hosps.	134	33
Totals.....	909	178

Mortality Abroad, 20 per cent.

AMPUTATION THIGH ABROAD, TRAUMATIC, PRIMARY, PLACE NOT STATED.

AUTHORITIES.	CASES.	DIED.	
Dr. E. Warren's surg., p. 395, Confederate Army	25	9	
Guy's Hosp. Repts.	12	5	
St. Thomas' Hosp.	5	2	
St. Bartholomew's Hosp., 1853-71.....	26	9	
Penn. Hosp.	24	10	
Mass. Gen. Hosp.	60	25	
Malgaigne, quoted in Gant's Surg., p. 689.....	46	34	
Other cases " " " "	24	24	
Birmingham Gen. Hosp., 1853-64.....	19	13	
Deutsches Zeitschrift f. Chir. B. 1, S. 187, }	23	15	
German-French War, }	5	4	
Same work, B. V., S. 26	10	4	
Bech's Kriegsschr	423	229	
Circular No. 6, Surg. Gen. U. S. A.....	16	12	
New York Hosp.	21	15	
Boston City Hosp.	12	2	
Siege of Antwerp, Schmidt's Jahrbücher, B. 156.....	3	0	
" Paris, 1830-32 " " "	27	17	
German-French War " " "	1589	1424	
Crimean War " " "	109	85	
Italian " " "	11	5	
German " 1866 " " "	Totals.....	2490	1943

Mortality, 78 per cent.

* Archiv. Klin. Chir. B. VIII. S. 910. These are all amputations for disease of the knee; they must therefore have been, with few exceptions, in the lower 3d, and are consequently classed as such.

SURGICAL OPERATIONS IN UPPER LAKE STATES. 803

AMPUTATION OF THIGH ABROAD, INTERMEDIARY AND SECONDARY
COMBINED, TIME NOT STATED.

AUTHORITIES.	CASES.	DIED.
Guy's Hosp. Repts.	11	9
St. Thomas' Hosp. Repts.	2	1
St. Bartholomew's Hosp., 1853-71	53	29
Birmingham Gen. Hosp., 1853-64	67	15
Gant's Surg., p. 689, Military cases	300	270
Bürlroth and others, in German-French War	34	22
Bech's Kriegschirurgie	41	22
Circular No. 6, Surg. Gen. U. S. A.	638	477
Mass. Gen. Hosp.	15	9
New York "	14	6
Boston City "	4	3
Pennsylvania "	15	6
Siege of Antwerp, Schmidt's Jahrbücher, B. 156	3	1
Paris, 1830-32	6	4
German-French War "	52	39
Crimean "	221	197
Italian "	128	107
German War, 1866	47	28
Dr. E. Warren's Surg., Confederate Army	39	34
Totals.....	1690	1279

Mortality abroad, 76 per cent.

AMPUTATION OF THIGH ABROAD, PATHOLOGICAL, PLACE NOT STATED.

AUTHORITIES.	CASES.	DIED.
Guy's Hosp. Repts., 1861-68	83	27
St. Thomas Hosp. Repts.	9	1
St. Bartholomew's Hosp. Repts., 1853-71	278	89
St. George Hosp., 1864-68	54	25
London Hosp., 1862-68	68	23
King's College Hosp., 1863-68	14	5
Royal Free " 1862-68	6	1
Westminster " 1861-67	5	4
St. Mary's "	6	1
Brit. Army Med. Rep.	3	0
Mr. H. D. Cardin, of Worcester	6	0
New York Hosp.	21	6
Pennsylv.	37	9
Boston City "	16	4
Mass. Gen. "	162	34
Totals.....	768	229

Mortality abroad, 30 per cent.

The following are figures from various authorities, in which the particulars of time, place, etc., are more imperfectly given than the above:

AMPUTATION OF THIGH, DETAILS, TIME, PLACE AND CAUSE IMPERFECTLY STATED.

AUTHORITIES.	CASES.	DIED.	PER CENT. MORTALITY.
Military cases from American and various European Wars, after deducting figures previously quoted.....	2156	1444	67
Civil Cases from various Sources.....	1243	713	57
Totals.....	3399	2157	63

GENERAL SUMMARY OF AMPUTATIONS OF THE THIGH.

TOTALS.	LAKE STATES.			ABROAD.		
	CASE	DIED	PER CT. MORT	CASE	DIED	PER CT. MORT
Upper 3d, primary.....	5	2	40	24	60	
" intermediary and secondary.....	1	1	18	8	44	
" pathological.....	2	0	30	8	27	
Middle 3d, primary.....	4	3	33	16	50	
" intermediary and secondary.....	5	1	39	23	59	
" pathological.....	7	2	56	12	22	
Lower 3d, primary.....	18	5	28	83	37	45
" intermediary and secondary.....	9	3	33	60	36	60
" pathological.....	22	0	00	909	178	20
Place not stated, primary.....				2490	1943	78
" " " intermediary and secondary.....				1690	1279	76
" " " pathological.....				768	229	30
Conditions not stated at all	3	1		3399	2157	63
Totals.....	76	18	24	9615	5950	62

It appears, therefore, that the average mortality of amputation of the thigh, in the Lake States, is considerably less than half that given in the published statistics elsewhere.

OPINIONS OF AUTHORS.

Authors contradict each other somewhat as to the conditions requiring amputation of the thigh.

Erichsen, vol. II., pp. 200 and 237, advises immediate

amputation of all compound gun shot fractures of the femur, except in the upper third.

On the other hand the *Archives Générales de Médecine* (tome xiii., série 5e.) says that in the Crimean War conservative treatment of gun shot fractures of the femur, or of any other part of the inferior member, was five times more successful than amputation. Yet Macleod, discussing the same war, says, we ought to use conservative treatment in the upper third, and amputation in the middle and lower thirds.

Hamilton says, in gun shot fractures of the middle third conservative treatment and amputation have equal success, while conservative treatment is the most fatal in the lower third. This is doubtless because gun shot fractures in the lower third are apt to split into the knee joint, thus opposing a very dangerous complication to conservative success.

In contradiction to this difference of the upper and lower thirds, Max Schmidt (*Schmidt's Jahrbücher*, 1872) says all the war statistics of 1830 show that conservative treatment of gun shot fractures of the thigh is more successful than amputation, *in every portion* of the member.

Demme and Legouest give statistics to the same end (see same article), showing that in all parts of the thigh, treated for gun shot fractures, the mortality of amputation exceeded that of conservative treatment by the following amounts:

	DEMME.	LEGOUEST.
Mort. of amp. in upper 3d exceeds conser. treat. by	29 pr. ct.	27 pr. ct.
" " middle 3d " " "	11 "	26 "
" " lower 3d " " "	18 "	32 "

Legouest elsewhere states (*Chirurgie d'Armée*, p. 537), that in the battle of Langensalza, 1866, and in the French army in the Crimea, and in Italy, conservative treatment of the thigh was most successful by about nineteen per cent.; while in the English army in the Crimea, in the American war of secession, in the Schleswig-Holstein war and in Stromeyer's figures from the battle of Langensalza, amputations of the thigh were more successful than conservative treatment by about fourteen per cent.

Dr. Albert Malinas (Conservation, Paris, 1872, p. 51) gives

a table showing that gun shot fractures in the thigh, in the Crimea and in the Italian war, according to the experience of the French army, were better treated conservatively than by amputation. He says the results were these:

	MORTALITY OF CONSERVATIVE TREATMENT OF THIGH.	MORTALITY OF AMPUTATION OF THIGH.
Crimean War.....	35 per cent.	{ Upper 3d., 94 per cent. Middle 3d., 94 per cent. Lower 3d., 90 per cent.
Italian War	58 per cent.	64 per cent.

Dr. S. W. Gross, in the October number of the *Am. Jour. Med. Sci.*, 1867, carefully collated the statistics on this subject, from which essay I condense the following points respecting gun shot fractures of the thigh, treated some by amputation and some by conservative treatment:

TREATMENT OF GUN SHOT FRACTURES OF THE THIGH.

AMPUTATIONS.

	CASES.	DIED.	PER CENT. MORTALITY.
All kinds Combined.....	4123	3146	76
Primary.....	695	381	55
Secondary (and Intermediary).....	753	572	76
Franco-Sardinian Army in Italy, and { Upper 3d..	225	177	79
British Army in Crimea. { Middle 3d..	268	175	65
	236	130	55

CONSERVATIVE TREATMENT.

	CASES.	DIED.	PER CENT. MORTALITY.
Franco-Sardinian Army in Italy, in 1859, French Army in Crimea and Am. War of Secession. { All kinds combined	1450	923	64
	Upper 3d.....	445	306
	Middle 3d.....	327	181
	Lower 3d.....	295	150

He concludes that in gun shot fractures of the thigh, conservative treatment is better than amputation by twelve per cent., the lower third being no exception, and better than exsection of the femur by twenty-four per cent.

Billroth, of Vienna, in his letters from the late German-French war, collates figures from various wars, which foot up as follows:

CONSERVATIVE TREATMENT OF GUN SHOT FRACTURE OF THIGH.		MILITARY AMPUTATION OF THIGH.	
Cases-----	1339	Cases-----	3721
Died-----	949	Died-----	2826
71 per cent. mortality.		76 per cent. mortality.	

As already stated, the *Archives Générales de Méd.*, 1859, has an article claiming that, in the Crimean war, conservative treatment for gun shot fracture of the leg and thigh was five times more successful than amputation. It is evident that the opinions of the most eminent men are in utter contradiction on this subject; and by some inexcusable blundering the figures are in the same situation. The truth is that military statistics are often extremely delusive, in consequence of the improper manner in which they are collected. We will discuss this matter further under the head of "Conclusions."

Formerly all gun shot fractures of the femur were supposed to demand amputation, but Malgaigne defended, before the French Academy, the opinion that conservative treatment should be tried wherever the circumstances did not compel amputation. Velpeau and Jobert (de Lamballe) sustained him.

Hamilton (*Military Surgery*, p. 399) advises to amputate the thigh for gun shot fracture: 1. When the patient must be carried far, over rough roads without adequate support to limb. 2. When the bones are greatly comminuted. 3. When there are uncontrollable pains and spasms. 4. When there is great contusion or laceration of soft parts. 5. When the principal arteries or nerves are destroyed. 6. When the fracture is at or near the knee.

He advises not to amputate: 1. When the bullet fractures the head, neck—trochanter—or shaft just below the trochanter. 2. When the wound is from a pistol, a spent ball, or any projectile which makes but little comminution.

Longmore, in his article in *Holmes' System of Surgery*, vol. ii, p. 227, quotes the statistics of the American war as showing that conservative treatment of gun shot fractures of the upper third of the thigh was three per cent. more successful than amputation, and hence recommends conservatism in uncomplicated cases. In the middle and lower thirds he recommends amputation, as shown by statistics to be slightly safer in the middle, and decidedly safer in the lower third than conservative treatment. His figures from Circular No. 6, S. G. O., are so erroneously quoted that I am obliged to correct them from the original document:

	CONSERV. TREAT.			AMPUTATIONS.		
	CASE	DIED	PER CT. MORT.	CASE	DIED	PER CT. MORT.
	-----	-----	-----	-----	-----	-----
Upper third.....	330	237	72	32	24	75
Middle third.....	238	132	55	93	51	55
Lower third.....	173	101	58	243	112	46

Circular No. 6, of the U. S. Surg. Gen., compares conservative treatment of gun shot fractures of the knee, with treatment by amputation just above, with the following results:

GUN SHOT FRACTURE OF KNEE, TREATED BY AMP.	CASES.	DIED.	PER CENT. MORTALITY.
	-----	-----	-----
Lower Third of Thigh.....	452	331	73
Same Injury Conservatively Treated.....	308	258	84

Dr. E. Warren, of the Confederate army, and Surg. Gen. of North Carolina, gives, in his "Surgery of the Field and Hospital," two hundred and one cases of fractured knee joint from the Richmond hospitals, with one hundred and twenty-one deaths, a mortality of sixty per cent. He remarks judiciously that these figures do not represent the whole truth, as many bad cases died before reaching the hospitals. Were these added the mortality would doubtless be greater.

The *Deutsch Zeitschrift für Chir.*, Bd. 2, S. 106, gives,

from the German-French war, thirty-four cases of penetrating gunshot wounds of the knee joint, with twenty-four deaths; a mortality of seventy per cent.

Max Schmidt (*Jahrbücher*, 1872) advocates conservative treatment—not only in wounds about the knee, not penetrating the capsule, but also in the simpler intracapsular wounds.

Surgeon J. M. Woodworth, formerly Med. Director of the Army of the Tennessee, and now Supervising Surgeon of Marine Hosps., claims, on the contrary, that almost all gun shot openings of the knee joint, even if the bones are not fractured, should, in military practice, be amputated.

Guthrie (Commentaries on the Crim. War) says gun shot fractures of the knee joint imperatively require primary amputation; but that if the patella alone be broken, and that only moderately, delay may be allowed. At page 151 he maintains that when gun shot fractures of the lower half of the femur do not communicate with the knee joint, conservative treatment should always be preferred.

CONCLUSIONS.

From this somewhat contradictory mass of opinions on one of the plainest operations in surgery we see how far from being settled many precepts of our art still are. We will try to evolve partial order out of the chaos, and where this is impossible we will at least ascertain what points are still unknown, and must wait the further growth of science for light upon them.

1. It is settled forever, as every one knows, that the nearer the operation comes to the body the greater the risk, other things being equal. There is an apparent exception in the traumatic secondary cases, for in these the mortality of secondary cases increases as we approach the knee. This is probably due to the inclusion of many cases in which compound fractures opened that joint, producing suppuration, etc., in which accident the earlier secondary amputations are excessively fatal. Amputations in the height of an active suppurating inflammation of the knee are considered almost necessarily fatal. Did the published records admit of our sifting out

these knee cases, we should probably find that the remaining secondary cases followed the usual rule of increasing danger as we approach the body.

Our average Lake State mortality for all amputations of the thigh is only 24 per cent. against 62 per cent. elsewhere. Our number in the upper two-thirds are too small to establish reliable averages, but if we distribute the 24 per cent. risk according to the experiences elsewhere, we shall have the following as our probable rates:

PROBABLE RISK OF AMPUTATIONS OF THIGH IN THE LAKE STATES.

Upper	3d Primary	about 30 per cent.
"	3d Intermediary.....	" 45 " "
"	3d Purely secondary.....	" 20 " "
"	3d Pathological	" 18 " "
Middle	3d Primary.....	" 24 " "
"	3d Intermediary	" 36 " "
"	3d Purely secondary.....	" 25 " "
"	3d Pathological	" 15 " "
Lower	3d Primary.....	" 22 " "
"	3d Intermediary	" 45 " "
"	3d Purely secondary.....	" 25 " "
"	3d Pathological	" 10 " "

These figures can only be approximate, of course. Massive as are the published statistics of amputations of the thigh abroad, most of them are in such a wretchedly crude and even contradictory condition, that their usefulness is in a great measure lost, and proportions taken from them and applied to our cases must be received with many allowances.

I ought to say here that in the division into traumatic and pathological, experience shows that amputations of "expediency," or "complaisance," that is, amputations performed to remove deformities, on limbs otherwise healthy, have a mortality much greater than other pathological cases, and rank nearly the same as traumatic primary operations.

The above averages will do as a starting point, but in each case we must consider the individual modifying circumstan-

ces. If the patient's condition and surroundings are better than usual, his risk will be much less; and if the reverse, it will, of course, be greater than the above average.

Injuries which, like bullet wounds, comminute the bones in the interior of the knee, require primary amputation, but if the period for this has already passed, the patient is in a very dangerous situation, as amputations of these cases are desperately perilous during the acute portion of the suppurative stage, and excisions are the same, while delay is not much better. Perhaps the best way would be to open the joint, pick out the fragments, apply Lister's carbolic acid treatment thoroughly every day, and keep up extension of the leg by adhesive plasters, weight and pulley, and thus carry the case over the period of acute activity, when the risk of an amputation will be greatly diminished.

This is only a suggestion, for which there is no accumulation of experimental proof as yet adduced.

Ordinary compound fractures, not comminuted, but yet extending into the knee joint, were often best treated in former times by a primary amputation; but at present, he that is master of the antiseptic methods, and bold enough to apply them thoroughly, will find them more useful than amputation for such cases, if seen immediately.

Military fractures of the thigh, not implicating the knee joint, and not accompanied with such injuries to vessels or other parts as will produce mortification of the member, are best treated conservatively, and especially so in the upper half of the thigh.

(To be Continued.)

THE following resolutions were passed at the Annual Meeting, April 11, 1876, of the Michigan State Board of Health. THE JOURNAL AND EXAMINER endorses them with the most hearty approval:

WHEREAS, The Signal Service Bureau of the United States has demonstrated its great usefulness in securing benefits to

public safety of life in this State, particularly to the large number of persons employed upon or journeying over the great lakes, and in promoting health through better protection of cereal and other food crops because of its warnings, and also through the valuable data for the study of the relations of health and of diseases to the climatic conditions, knowledge of which is essential to an avoidance of causes now statistically shown to be of great influence on the death rate; therefore,

Resolved, That the hope be expressed by this Board that the means of the usefulness of U. S. Signal Service Bureau be in no way abridged, but rather increased; that it be permanently organized, and that its sphere of labor be enlarged, especially in the direction of obtaining and recording meteorological data bearing still more closely upon important questions relating to the public health.

Resolved, That, although not essential in connection with its work for the prediction of storms, it is desirable for purposes of progress in public health that we have at least monthly statements of the absolute humidity of the atmosphere, and of the exact atmospheric pressure at different stations (not calculated to sea level as required for other purposes) and that it is also desirable that observations on Ozone be recorded.

Resolved, That in the opinion of this Board, such an enlargement of the means and labor of the Signal Service as is contemplated in the foregoing, will add to its present acknowledged usefulness, and is desirable in the interests of public health in this State.

Resolved, That the Secretary of this Board be directed to forward a copy of the foregoing preamble and resolutions to the Chief Signal Service Officer of the United States, and to each of the members of Congress from this State.

DIAGNOSTIC SYLLABUS OF THE INFLAMMATION COMMONLY MET WITH IN THE UTERUS AND VAGINA.

PREPARED BY J. H. ETHERIDGE, M. D.,

PROF. OF THERAPEUTICS IN RUSH MEDICAL COLLEGE, ONE OF THE ATTENDING
GYNAECOLOGISTS AT CENTRAL FREE DISPENSARY.

The greatest difficulty a young gynæcologist has to encounter is correct diagnosis. Writers are justified in publishing

anything that will give him assistance in determining what ails his patient. The following syllabus, prepared by the writer several years ago for individual use, is published in the hope that others may be benefited. Familiarity with anatomy and pathology is absolutely indispensable to profiting by this tabulation. Mastering them thoroughly often enables the gynaecologist to know almost certainly what to expect from the general symptoms, and using the means of diagnosis is only confirmatory of his diagnostic suspicions. The usual means of diagnosis may be thus arranged to show at a glance what they reveal:

MEANS OF DIAGNOSIS.

GEN'L SYMPTOMS.	TOUCH.	SPECULUM.	PROBE.
1. Pain: Locality and character. Amount.	Reveals: 1. Perviousness of vag. canal 2. Location, size, density and tenderness of cervix. 3. Os open or v. v., soft or v. v., smooth or rough, moist or dry, enlarged or elongated or atrophied. 4. Presence or absence of hardness or tumefaction of recto-vaginal or cysto- vaginal spaces; also na- ture of the same. 5. State of ovaries and pelvic areolar tissue determined by lateral and upward pressure. By Conjoined Manipulation: 6. Volume, shape, sensitiv- eness of uterus, ovaries, broad ligaments and bladder.	1. Reveals color of m. m. of va- ginal tract and cervix, and con- dition of os. 2. Nature of leucor- rhœa. 3. Declares atrophy or hypertrophy of cervix. 4. Reveals nature of mucus abra- sions and "ul- cerations."	1. Reveals capacity of uterus. 2. Existence of for- eign growths. 3. Shows deviations of course of ca- nal, and differ- entiates them from tumors. 4. Indicates Endo- metritis.
2. Leucorrhœa: Character. Amount. Constancy.			
3. Menstruation: Regularity. Amount. Pain.			

A glance at the syllabus will serve to show its design. In such a condensed arrangement of symptoms, extreme accuracy and exhaustiveness are impossible. One or all four of these generally recognized uterine inflammations may be present, at one and the same time, in the same patient. Novices are advised to systematically use the indicated "means of diagnosis," and habits of accurately observing will soon be engendered.

FOUR VARIETIES OF UTERINE

MEANS OF DIAGNOSIS.	1. METRITIS.		2. CERVICITIS.			
	Acute.	Very rare.	Chronic.	Acute.	Chronic.	
1. Gen. sym			<i>Gen'l Symptoms:</i> a. Violent pelvic pain, accompanied with rectal, vesical and uterine tenesmus, and sometimes with nausea and vomiting. b. Pressure over abdomen reveals great sensitiveness.	<i>Gen'l Symptoms:</i> a. Dull, heavy, dragging pain in pelvis, increased by locomotion. b. Defecation and coition painful. c. Menses accompanied with pain, which begins several days previous. d. Pain in mammae during and before menstruation. e. Darkening of areola of the breast. f. Nausea and vomiting. g. Great nervous disturbance. h. Pressure on rectum with hemorrhoids and tenesmus. i. Pressure on bladder with vesical tenesmus.	See Acute Metritis.	<i>Gen'l Symptoms:</i> a. Pain in back and loins. b. Pressure on bladder or rectum. c. Painful and sometimes profuse menstruation. d. Difficulty of locomotion. e. Nervous disorders. f. Pain during sexual intercourse. g. Dyspepsia, headache, general lassitude and debility.
2. Touch.		<i>Touch:</i> a. Vagina hot and dry, unless from co-existing endometritis there be purulent discharge. b. Organ low in pelvis, os enlarged, cervix swollen, pressure on cervix very painful. c. Painful tenderness most apparent upon rectal touch and conjoined manipulation.	<i>Touch:</i> a. Enlargement. b. Tenderness.		<i>Touch:</i> a. Uterus low down. b. Cervix large, swollen and painful and os may admit finger. c. Usually tenderness.	
3. Specul'm		<i>Speculum:</i> a. Usually produces too much pain to be used.	<i>Speculum:</i> Nothing revealed specially.		<i>Speculum:</i> Confirms signs evinced by touch.	
4. Probe.		<i>Probe:</i> a. Produces intolerable pain and cannot usually be resorted to.	<i>Probe:</i> a. Usually reveals some flexion or version, tenderness.		<i>Probe:</i> Reveals great sensitiveness before reaching os internum, but nothing beyond that.	

INFLAMMATION, DIVIDED AS FOLLOWS:

3. ENDOMETRITIS.		4. ENDOCERVICITIS.	
Acute.	Chronic.	Acute.	Chronic.
See Acute Endocer- vicitis.	<p><i>Gen'l Symptoms:</i></p> <ul style="list-style-type: none"> a. Leucorrhœa streaked, gairy and bloody. b. Menstrual disorders. c. Pain in back, groins and hypogastrium. d. Nervous disorders. e. Tympanitis. f. Symptoms of pregnancy. g. Sterility. <p><i>Touch:</i></p> <ul style="list-style-type: none"> a. Conjoined manipulation reveals tenderness of fundus. <p><i>Speculum:</i></p> <ul style="list-style-type: none"> a. Reveals nothing special. <p><i>Probe:</i></p> <ul style="list-style-type: none"> a. Patulous os internum. b. Uterine cavity prolonged. c. Tenderness. Withdrawal followed by blood. 	<p><i>General Symptoms:</i></p> <ul style="list-style-type: none"> a. Dragging weight and pain in pelvis, pain in back, groin and thighs. b. Rectal and vesical tenesmus. c. Purulent discharge sometimes bloody after 3 or 4 days. d. Tympanitis and tender abdomen. <p><i>Touch:</i></p> <ul style="list-style-type: none"> a. Vagina hot and dry or covered with above discharge. b. Os gaping, cervix swollen and tender, body slightly enlarged, whole organ lower in pelvis than normal. <p><i>Speculum:</i></p> <ul style="list-style-type: none"> a. Cervix puffy, swollen and red, fluid exuding from os either clear, albuminous looking, mucopurulent or stringy and tenacious. <p><i>Probe:</i></p> <ul style="list-style-type: none"> a. Great tenderness throughout whole organ and removal followed by a few drops of blood. 	<p><i>General Symptoms:</i></p> <ul style="list-style-type: none"> a. Dragging sensation in the pelvis. b. Pain in back and loins increased by exercise. c. Profuse irritating leucorrhœa, like boiled starch. d. Menses too scanty or v. v., too frequent or v. v. e. Nervous, irascible, moody or even hysterical. f. Digestion impaired, ultimately anaemia, sometimes nausea, etc. <p><i>Touch:</i></p> <ul style="list-style-type: none"> a. Os in normal position, may be enlarged, lips puffy or may be roughened. b. Pain results from placing the finger under the cervix and pressing upwards. <p><i>Speculum:</i></p> <ul style="list-style-type: none"> a. Long, stringy, tough, tenacious mucus, difficult to remove, exuding from os. b. Cervix not usually enlarged, may be puffy and swollen and very red, as if ulcerated, due to removal of investing epithelium. <p><i>Probe:</i></p> <ul style="list-style-type: none"> a. Meets with obstruction at os internum. b. Does not produce pain by striking against the walls of the fundus, nor is its removal followed by blood or mucus.

Editorial.

THE CONTROVERSY BETWEEN MR. JONATHAN HUTCHINSON AND DR. TILBURY FOX.

In the third fasciculus of the Illustrations of Clinical Surgery which are now in course of publication, and which represent the results of Mr. Hutchinson's professional labors for the last twenty years, there is a plate which has attracted unusual attention. It is a portrait of a disease which is there termed Cheiro-Pompholyx; the illustration being accompanied by text in which the history of the case is detailed. Soon after the appearance of this fasciculus, the 8th part of Dr. Fox's Atlas of Skin Diseases was placed in the hands of the profession, and not a few were surprised to find on its 48th page the following "Note on Cheiro-Pompholyx:"

"Mr. Hutchinson has recently described and figured an eruption which he has termed cheiro-pompholyx, without, as he remarks, 'intending to imply a relationship to true pemphigus,' by that name, which is therefore a most unfortunate and misleading one. This eruption is nothing more nor less than that of which I first gave a full account in 1873, in the third edition of my work on skin diseases, under the designation of Dysidrosis; and the case from which Mr. Hutchinson's representation was taken was an exaggerated example of dysidrosis that came under my observation, and was sent to me by Dr. Russell Reynolds. The disease is not a pompholyx. It is moreover not limited to the hand, and therefore not entitled to be styled by the prefix cheiro. This disease is not produced by effusion of serum into the skin, as Mr. Hutchinson declares, but by distension of the sweat apparatus, and uplifting of the cuticle by sweat and the production of large vesicles or bullæ by the free secretion of sweat and the coalescence of smaller vesicles. I shall give further details when I come to represent the disease and to describe it further on; but it is strange that my original description of the disease should have been ignored."

Mr. Hutchinson in the text accompanying his illustration, admits that his patient was seen by Dr. Fox in the year 1869. The former has more recently published (*London Lancet*, July, 1876,) an article which may be presumed to embody his rejoinder to Dr. Fox's note. It is entitled, "Cheiro-Pompholyx—Notes of a Clinical Lecture on 'A recurrent bullous eruption on the hands,' written out in April, 1871, and now printed verbatim."

This is not the first occasion upon which two eminent men have contended for the honor of a lady's hand. What are the real merits of the issue? Viewing the case comprehensively, it becomes clear that to Mr. Hutchinson is due the credit of having first seen and described the lesions, as well as of appreciating their interesting features to the extent of ordering the first drawing of the hands executed. His colored plate of the disease is admirably finished, and incomparably superior to those which Dr. Fox is now editing.

The verbal descriptions of the malady, as given by both authors, are equally good. This is indeed nothing more than we have a right to expect, having in mind the recognized ability of the two gentlemen, and the fact that each was engaged in portraying precisely the same objective phenomena. We have had an opportunity of studying less exaggerated forms of the disease than that delineated, and are thus in position to know that the comparisons instituted by the two, (in which, curiously enough, often the same words are employed,) are strikingly accurate.

Per contra, it is to be remarked that Dr. Fox has, without question, established the correct pathology of the lesion; and to him is due the honor not only of this, but of appropriately and accurately naming the disease. The designation given by Mr. Hutchinson has about it the flavor of a musty antiquity. It recalls the "ancient and fish-like odor" of the period when a constellation in the heavens, as well as a skin disease, had a crab for a god-father. "Pompholyx" is a relic of the literature of Hippocrates, Celsus and Avicenna. And yet, by this term Mr. Hutchinson does "not intend to imply a relationship to true pemphigus." It would be curious and interest-

ing to learn the author's idea of the distinction between pompholyx and true pemphigus. Etymologically considered, one name likens a bulla to a blister, and the other to a bladder! The clinical distinction between the two, (if they are two,) is just about as definite. It is probably for this reason that the term pompholyx has nearly disappeared from the literature of cutaneous medicine. It is not to be found in the description of a separate disease in any of the more recent text-books, and is entirely omitted in Hebra's classification. The term pemphigus, on the other hand, is not only respectable for its antiquity, but has become prolific in its old age. Von Martius, in 1829, described ninety-seven varieties of the species, and Wilson mentions fifteen. It has been made to designate a wide range of disorders of the skin, from those produced by syphilis to certain curious tumors, having caseous contents, found upon the integument of a child. There has been too much of this unwarrantable use of names for each separate symptom displayed upon the skin. It has been the reproach of dermatology that it consisted of a nomenclature.

We may even go further than Dr. Fox, who objects to the prefix cheiro, on account of the non-limitation of the disease to the hand. For, while Mr. Hutchinson describes a red lichenous rash over the body of the patient, he does not attempt to explain its occurrence. But if Dr. Fox's pathology be correct, it can be readily understood how the rapid and free secretion of retained sweat, (forming bullæ upon the hands,) might be accompanied by hyperæmia of the sudoriparous follicles of the body elsewhere, producing an eruption quite similar to that of lichen tropicus.

Our object in calling attention to the publicly expressed difference of opinion of these two distinguished medical men is, in part, to commend the manner in which they have thus far discussed that difference. There have been no acrimonious charges, no offensive personal allusions in their written expressions. In other words, they have not only shown that they were gentlemen, but members of a profession whose obligations required their sustaining such relations to each other as the public would recognize and respect. Scientific

discussions can have but one object—the ascertaining of the truth. The question between two savants will always be, not "Which of us is in the right?" but, "What is the right, even if we be both wrong?" Thus conducted, every discussion has a value. Conducted with any other end in view, it becomes a public impertinence.

Dermatologists have a worthy precedent in these matters. In the now historical contest between Professors Hebra, of Vienna, and Pick, of Prague, on the question of the parasitic or non-parasitic nature of eczema marginatum, (*Archiv. für Dermatol. u. Syph.* I. 1, 2, and 3,) there was great difference of opinion combined with a spirit of fairness and courtesy, and an inflexible purpose to know the truth. The result was, that to-day the real character of the disease they had under consideration is distinctly recognized.

ARCHIVES OF CLINICAL SURGERY.

Such is the name of a new Monthly Journal to be devoted to the different departments of surgery exclusively. The initial number is before us. It has a very full table of contents and is neat and creditable in appearance. We are glad to see it so early give promise of a fulfillment of its pledge to give regular reports from the surgical wards of the hospitals in all our larger cities. But some of the hospital reports need to be made fuller and more complete to be valuable. While it is true that in reports of cases we only need a statement of essential facts to make them valuable for subjects of study and comparison, it is nevertheless true that nothing less than all the cardinal points will suffice.

Dr. Edward J. Birmingham is the editor, and Rutledge & Co. the publishers (102 W. 49th St., New York), and they insist on having four dollars in advance for each subscription. We shall exchange compliments with the new Journal every month and with great pleasure.

Correspondence.

HOMOEOPATHY IN THE UNIVERSITY OF MICHIGAN.

The following correspondence is self-explanatory:

UNIVERSITY OF MICHIGAN, }
ANN ARBOR, June 16, 1876. }

Rush Medical College, Chicago, Ill.:

TO THE DEAN. DEAR SIR—I am instructed by our Faculty to inquire whether your College will accept the tickets, and recognize the diploma of the Department of Medicine and Surgery, (the old regular school) of this University?

Frequent inquiries are made by our students as to whether their time will be allowed in other colleges, and we desire now to be able to state officially to them what the position of the leading medical colleges of the country is on this question. An early reply will oblige,

Yours, very truly,
E. S. DUNSTER, M.D., *Acting Dean.*

RUSH MEDICAL COLLEGE, }
CHICAGO, July 5, 1876. }

The following resolution, adopted to-day by the Faculty of this College, contains an answer to questions relative to Homœopathy sent to this institution by the Dean of the University of Michigan:

“Resolved, That the time and attendance of students upon lectures of the medical department of the University of Michigan, up to and including the last regular session of that College, may be recognized as part of the requisites for graduation in this College; but such time and attendance shall not hereafter be accepted so long as the teaching of Homœopathy, in whole or in part, shall be included in the course of study at that institution.”

J. H. ETHERIDGE, *Assistant Secretary.*

UNIVERSITY OF MICHIGAN,
ANN ARBOR, Mich., July 10, 1876.

J. H. ETHERIDGE, M.D.,

Sec'y Rush Medical College, Chicago.

DEAR SIR—Your favor of the 5th inst. is just received. In reply, I beg leave to ask again for more definite information on the point in question. The last clause of your resolution says, "so long as the teaching of Homœopathy, in whole or in part, shall be included in the course of study *at that institution.*" Homœopathy is taught in the "College of Homœopathy," but not in any way direct or indirect, in the "Department of Medicine and Surgery," which is the old medical school of this University. Our school and our students have no more association or relation with Homœopathy than your school and your students. The Homœopathic students, however, are required to listen to our lectures in the fundamental branches of medicine. The curriculum is unchanged, save that it is gradually being increased in severity of requirements, both for admission and for graduation. Will you therefore please advise me whether, by the words, "*at that institution,*" in your resolution, you mean the "Department of Medicine and Surgery," *i. e.*, the old medical school, or whether you mean the "University of Michigan," as a whole, which includes of course all its separate colleges, the Homœopathic among the rest. There has been, and still is, much misunderstanding of the situation in the University of Michigan relative to Homœopathy, and the wording of your resolution leads me to infer that you have adopted the opinion which has been very industriously circulated by our enemies, that Homœopathy is taught in our College, and that the Homœopathic professors are part of our faculty; in both of which statements there is not a grain of truth. Regretting to again trouble you with this matter, and hoping for a speedy reply,

I am very respectfully your servant,
E. S. DUNSTER, M.D., *Acting Dean.*

RUSH MEDICAL COLLEGE, }
CHICAGO, July 17, 1876. }

PROF. E. S. DUNSTER, *Acting Dean:*

MY DEAR SIR-- Your note to the Assistant Secretary, relative to the clause, "at that institution," which is contained in the resolution adopted by the Faculty of Rush Medical College, has been handed over to me for reply. In response to your desire for "more definite information," I have to say:

First, That the legislative device of the Board of Regents of the University of Michigan fails entirely to obscure the fact that the Medical Department, in connection with two Homœopathic professors, is engaged in educating Homœopathic students to become Homœopathic practitioners.

Second, That when that device calls two Homœopathic professors a "Medical College," or a "College of Homœopathy," and requires the Medical Department to instruct the Homœopathic students on all subjects except Homœopathic therapeutics and practice, it practically establishes a copartnership of effort in the education and manufacture of Homœopathic doctors.

Third, That when that device requires the Medical Department not only to instruct Homœopathic students, but also to report to the Board of Regents upon the proficiency of those students; and when, upon that report, and a similar report from the two Homœopathic professors, the board proceeds to confer upon those Homœopathic students the degree of M.D., the enactment of that device essentially marries the Medical Department to the so-called Homœopathic College, and degrades it to the general level of fraud, delusion, and farce.

I have the honor to be respectfully and sorrowfully yours,
MOSES GUNN.

UNIVERSITY OF MICHIGAN, }
ANN ARBOR, Mich., July 19, 1876. }

PROF. MOSES GUNN, M.D.:

Dear Sir—I have the honor to acknowledge the receipt of your communication of the 17th inst., and in reply beg leave to intimate that it does not answer the question which I sub-

mitted to the Assistant Secretary of your College. Instead thereof you give me your opinion of the situation here, which is no doubt very valuable and instructive, but which was entirely unsolicited, and is in no way pertinent to my query. I shall esteem it a favor if you will inform me what is meant in the resolution of your faculty by the words, "in that institution." Or, to put the question even more definitely, do you, by these words, refer to the old regular Medical College of this University, or to the new Homœopathic Medical College?

I have the honor to remain very respectfully and cheerfully,
your obedient servant.

E. S. DUNSTER, M. D.,
Acting Dean Dep't Med. and Surg. Univ. Mich.

RUSH MEDICAL COLLEGE, }
CHICAGO, July 20, 1876. }

PROF. E. S. DUNSTER, *Acting Dean:*

MY DEAR SIR—If you are still in doubt as to the opinion of Rush Medical College, viz., that your Medical Department and two Homœopathic professors are educating and making Homœopathic doctors, and that thus, *in effect*, Homœopathy is taught by the "old" and *formerly* "regular" Medical Department of the University of Michigan, we must leave you to the comforts of your doubt as to our meaning in the term, "at that institution."

Respectfully and still sorrowingly yours,
MOSES GUNN.

Hospitals.

COOK COUNTY HOSPITAL, SURGICAL DEPARTMENT.

Service of DR. FREER.

May 23. Dr. Freer presented and made remarks on the following cases:

1. *Fracture of Clavicle; outer third.*

Dr. F. remarked that he should apply a dressing devised some years ago by himself. The method consists of the proper application of two strips of adhesive plaster. The first piece, three and a half to four inches wide, is a sling, and serves to raise the arm. It passes beneath the elbow, and laps over the opposite shoulder to a point below the nipple and from the same level behind. The second strip, four inches wide, is an axillary band. It is wrapped at one end firmly on the upper part of the arm, then carried across the back beneath the axilla of the opposite side and returned in front to near the point of starting. This fixes the shoulder back. A wedge may be put beneath the axilla or not; but when the case is one of the outer third it is hardly necessary. It is well to measure with a roller bandage before cutting the strips. The warmth of the body will be sufficient to attach every portion except the ends; until they are warm and adherent, a roller had better be applied over the whole. This is one out of perhaps fifty different ways of dressing fractures of the clavicle. It is sometimes put down as Dr. Sayre's method; but a diagram and a report of cases in the records of the Illinois State Medical Society for 1858, show that it was described here four years earlier than the date of Dr. Sayre's invention, which was merely a repetition.

2. *Elephantiasis.*

A middle aged man of apparently good constitution, presented this condition in the right leg. The leg and foot appeared like a cylinder. Dr. F. remarked that the pathology must be understood before rational treatment could be had.

These appearances did not imply inflammation, but rather a hypertrophied condition of the skin and connective tissue beneath. In consequence of increased vascular supply, there is a condition of hypernutrition with actual increase of tissue, as a result. Dr. Carrochan maintains that enlargement of the arteries of the part attends the affection, and upon this is based his treatment by ligation of the main artery of the limb. In fact, ligature is the leading treatment of the day, and is supposed to have the effect of diminishing the exalted nutritive action in the part, and thus serves to reduce the hypertrophy. You may observe that the skin has been affected with a chronic eczema and is being treated with "tar ointment" with apparent benefit. The results of ligation thus far have not been encouraging, the affection generally returning in a short time. Dr. Carrochan claims one cure, which was the first operation of the kind on record. Bryant also asserts a cure in a case described in his work on Surgery. Treatment by elastic bandaging has its advocates and is worthy of trial.

3. *Amputation of Foot for Frostbite.*

A young man with a thrifty eruption of acne on his face. The frostbite occurred more than a year ago. Spontaneous separation of the toes took place at the metatarso-phalangeal articulation. He says the toes dropped off in three days as clean as it is now. This is almost incredible, for tendons do not separate so readily. Together with ligaments and connective tissue, they are the last to give way. However there has never been any interference, and we have now an open sore and granulations. So much nature can do. She would have done a little better here if she had had longer flaps. It will be necessary now to excise the ends of the bones. It may be that a better surgical display could be made by going back to the point of Hey's or Chopart's operation. But the good surgeon never does any thing from such a motive. It is a rule in surgery, applying to all amputations, to save all you can. The matter was not so much insisted on ten years ago. We will expose the bones, and first see where we can gain

sound bone and sufficient skin to form a flap, rather avoiding the articulations. The tissues were dissected up and the metatarsal bones divided with a saw.

1. *Fracture of Right Clavicle.*

May 26. A strong laboring man received a direct stroke. To-day the dressing will be by Fox's apparatus, consisting of a sleeve of muslin and a padded ring for the opposite shoulder. The wedge for the axilla on the affected side, which Fox recommended, is of but little use. For ease and simplicity this dressing has no superior. Adhesive strips do not serve a very good purpose in hot weather for the perspiration throws them off.

2. *Re-amputation of the Leg; lower third.*

A young man, pale and rather unhealthy in appearance. The leg was amputated a year ago last July. It was reamputated the December following. It has since been treated with a great deal of care. The flaps, failing to heal over, and appearing tight and bound down, were at one time dissected up and drawn over the liberated end of the bone again. But still it refused to heal. We now have an ulcer; the bone projects a little. A granulating surface, not thicker than a thumb nail, covers it. If we go back to healthy bone and healthy skin, we may fix it so it will heal. Long flaps often turn out as this has done. They always retract sufficiently and are never too long. The amputation was swiftly performed, about two inches of bone being removed, together with the old cicatritial tissue. Antero-posterior flaps were made. Dr. F. remarked that sutures were of doubtful utility and sure to be a source of irritation. Generally, after amputations, there is more or less oozing of blood with inflammatory exudation, which, if the flaps have been closed by suture, causes tension sufficient at times to arrest the circulation and lead to gangrene and sloughing. Even without sutures, it is remarkable how the flaps will adapt themselves and bring their edges into apposition. Of course where you expect union by first intention, the edges must be adapted at first,

either by sutures or adhesive plaster. But in hospital practice we hardly expect healing by first intention. In fact open treatment of wounds is rapidly gaining ground, especially in Germany. The worst enemy the surgeon has to encounter is putrid and putrefying animal matter. This danger is so great that it has led to exaggerated endeavors, and we fear sometimes ill-directed. Some surgeons enter the operating room behind an advance guard of carbolic acid spray, in the vain hope of destroying the invisible spores and germs that lie in wait for their victim. Dr. F. continued by saying that he did not very much believe in the doctrine of the destructive influence of microscopic living things. It is not these germs we are after, but the result of putrefaction. A solution of organic matter is a study from first to last. But there will be no living forms until there is putrefaction. If we follow it up from the day when putrefaction begins, we shall discover coming one after another different forms of life, the evolution of species out of the ruins of others; when last changes have occurred the specimen will be pure of putrid matter. It is a great mistake to think of fighting living spores or living germs. We have to fight putrid organic matter, and this must be done by thorough cleanliness, and by efficient and constant irrigation of the part with proper antiseptic fluids. There must not be recesses and hiding places in which the enemy may lurk, but every part must be accessible to the means of ablution.

May 30. Dr. F. remarked of the leg amputated at the last clinic that the patient had an attack of septicæmia. He had three strong chills in quick succession, followed by profuse perspiration. He had been in a very bad state yesterday; but he had had the same symptoms after the previous operation; so it was to be hoped he would yet do well. There is a difference between septicæmia and pyæmia. The first is the contamination of the system with fluids in a state of putrefaction. A system sufficiently vigorous may cast off the poison, but if the case goes on to pyæmia we have a graver state of things. Local inflammation takes place, as in the lungs, liver, etc., leading to purulent collections, with grave constitutional disturbance, usually ending in death.

1. *Carious Astragalus. Removal.*

A healthy looking young man, eighteen; fireman to an engine. Considerable swelling surrounding the outer malleolus; a fistulous opening just beneath another posteriorly. He says the instep gave him pain last September—the first notice that anything was wrong. In a month and a half the swelling had developed into an abscess, which was opened. He is unable to assign any cause, but it is probable there was some injury to the joint or its appendages; possibly even the bones of the articulation. These bones are quite vascular, and ever so small a rupture of a blood vessel may lead to inflammation which may go on, and at last get to a serious result. The difference between inflammation of bone and inflammation of soft tissues is principally one of time and degree of destruction of tissues that follows. Caries of the tarsus is a very complicated affection. The ankle joint proper is less frequently affected than other portions below. The trouble here is probably between the astragalus and the os calcis. We will proceed to give this foot a trial for its life. It shall have the benefit of a doubt. The attempt will be made in every way to save it in some shape. Dr. F. made a crescent shaped incision, commencing in front of the malleolus, deeply dividing the tissues to the inferior surface of the astragalus. He remarked of Esmarck's band that it was of incalculable value in surgery, preventing any interference from blood, securing a perfectly dry wound. The astragalus was soft and carious, and was scraped out easily with a bone gouge. The whole was involved, and the whole had to be removed. It was the work of about twenty minutes. Communication through the walls left between the cavity and the inner surface of the instep was made and a pledget of oakum drawn in to secure perfect drainage. A plaster of Paris splint was applied to the anterior surface of the leg, instep, and dorsum of the foot, afterward a fracture box.

June 2. The foot operated on for caries at the last clinic is doing splendidly. There is less pain than before, and we may hope for a good result. The cavity will gradually be filled up.

1. Railroad Injury of Foot.

A lad attempting to steal a ride on a freight train got his big toe crushed off and considerable contusion to the foot. It has been left that we might see how much could be saved. The first and second phalanges have dropped spontaneously, leaving a large open ulcer from the inner surface to the middle of the dorsum. The operation consisted in disarticulating the whole of the first metatarsal bone. Dr. F. repeated that it was a cardinal principle now-a-days to make the least sacrifice possible. It has become an axiom in surgery that the ratio of accidents increases as operations go toward the body. There is more danger in the ankle than in the foot; more in the leg just above than in either. Always taking into consideration the safety of the patient and a good result, it is sometimes a nice question, therefore, to determine how much to take. This patient is young and vigorous; the growth of tissue is going on very rapidly. It will be left to heal by open granulation. Dressing of oakum.

2. False Ankylosis of Knee.

(April 14. Dr. Bogue.) The patella is free, but the position is about the same as before any thing was done. Drs. B. and F. have been studying this case a long time, and are very anxious to straighten it. A full board of surgeons to-day decided to bore the femur and afterward break it. The drill entered about the middle of the lower third. A dozen perforations of the bone were effected through three punctures of the skin. When the softening which results from the perforation is sufficient, the bone will be broken and the limb straightened enough to have the improvement desired.

1. Injury of Elbow.

June 6. Child from the dispensary. We should never fail to ascertain whether the joint is capable of all its motions, and never be afraid of hurting the patient. If there is much pain use chloroform. Familiarity with the joints should be acquired above all things. There is nothing in this case but a sprain. Even here we are liable to false ankylosis from

inflammation. The advice of Hamilton is good. We should move the joint in a week whenever there may be danger of ankylosis; flex it, no matter what the injury. Passive motion may save a suit for malpractice.

2. *Injury of Elbow.*

(May 9. Dr. Powell; April 26, Dr. Bogue.) Youth. Here there was a fracture of the external condyle. The head of the radius was removed from its natural position. The hand cannot be carried to the mouth. Passive motion continued.

3. *Dislocation of Sternal End of Right Clavicle, Forward.*

A man past middle age. Two weeks ago he fell down stairs all in a heap. Dr. F. remarked that this injury was very rare. This was the first case he had ever seen. There is some hard swelling, as if there had been a fracture and callus had been thrown out. Whenever he moves the shoulders back the free end is thrown into position and the irritation produced by every movement doubtless causes the indurated swelling. He is to be kept on his back. No other treatment is called for.

4. *Chronic Rheumatic Arthritis of Knee.*

An elderly man. Dr. F. remarked that joints are sparsely supplied with blood vessels. The tissues entering into their formation are of a low order, and are less capable of resisting the vicissitudes of temperature and other insults than those with higher endowments of vitality and nutrition. In this case we have the results of protracted rheumatic disease. The joint is not ankylosed but is stiff. It moves dryly and with creaking sounds. There is little proper secretion from the synovial membrane. Here on the inner side we have a calcareous deposit. The affection has lasted years and we cannot expect a cure. The most rational thing to do is to place the part in a state of immobility and protect it from the vicissitudes of temperature with cotton wadding or fur. The joints of old persons once in a pathological state, require constant protection. Warmth is of the first importance to young and old. Rubbing is of great importance, for it accelerates the

circulation and consequently nutrition. There are more salutary effects from *massage*, as the French call it, than the medical profession are aware of. The treatment ordered was a plaster of Paris splint lined with cotton batting, and to go about with a cane.

5. *Chronic Inflammation of Knee.*

A well formed and well nourished man, thirty-three, a cripple for the last three years. The knee is greatly enlarged. There is a sinus beneath. This case illustrates a large class. The hospital is always stocked with them. It is very important here to know whether the inflammation at first was of the synovial membrane, or outside the joint. If it had been in the bones, primarily, there would have been destruction before this. Besides bone disease is more an affection of youth. If it had commenced outside, it should have been well long ago. It was doubtless of the synovial membrane, and went on without any great destruction; a chronic subacute case falling short of suppuration, passing the bounds of normal nutrition only a very little. There is probably a granulated or fungous state of the synovial membrane, described as gelatinous. Brodie first described the affection in these terms. It is merely descriptive of the appearance of the tissues within the joint in chronic inflammations of the knee. There is very little ankylosis, and yet he is unable to walk or to use the leg. We are giving the joint a trial, bringing all the evidence to bear upon it, and if at last there should be any doubt the joint ought to have the benefit. We propose now to try the effect of extension for a little while, then we shall put on a plaster of Paris splint. Added to this we shall inject carbolic acid, two per cent. Prof. Haeter of Germany, is the author of this treatment.

6. *Varicose Veins.*

A young carriage maker. The right internal saphenous vein is at fault. The blood is not supported in little segments between the valves, as in health, but in a long column. Dr. F. remarked that after many years experience he prefers the

treatment by pins and ligatures to any other method. We want to try to fix the vein between the thumb and finger. At first a vertical insertion of the pin is required; then a sudden pass beneath the vein. Small pins are best, but not too small. The ligature should be drawn sufficiently tight to strangulate the vein. That is all that is needed. The injection of the tincture of chloride of iron has caused disaster in two cases in this hospital, and for that reason is disliked. Any tyro can insert the pins. The time to remove will depend on the effect. If the blood in the segments of the vein included is reduced to a hard coagulum, the time has sufficed. It will be five to seven days. He should be kept in bed; fomentation may be necessary, but the degree of inflammation will depend on the case. Some have such tissues that they resent any thing.

1. *Ulcer of Leg, Following a Burn.*

June 9. Dr. F. remarked that the history of ulcers, properly understood, is the key to that of most injuries of the body. Their study affords more knowledge as to the processes of healing than can be acquired in any other way. In this case the surface of the ulcer has a watery or a gelatinous character. This is not healthy. As soon as the granulations become firm we shall try what virtue there is in grafting.

Dr. F. showed the method he has devised for irrigating wounds, and thus preventing putrid absorption, illustrating it by the case of excision of the astragalus, (May 30.) The leg is suspended in a sling supported by a frame-work above the member, on which is a basin containing a solution of alcohol. In this rests the end of a quarter inch rubber tube, which leads downward to the ankle, and through the wound to the opposite side. The part in the wound is perforated here and there, in order to secure perfect irrigation. The result is a constant dripping into another basin situated beneath. The wound seems perfectly clean, and there is not the slightest evidence of inflammation in the part, nor the least odor.

Translations.

THE ACTION OF OBSTETRICAL FORCEPS.

(From the French of Prof. E. Hubert.)

BY FRED. J. HUSE, M.D.

(Continued from the July Number.)

Resistance of the maternal tissues. The strain of traction is exerted upon the head of the foetus and upon the maternal organs. When traction is made exactly in the direction of the axis, and when the diameters of the head are less than those of the pelvic canal, the organs of the mother have only to sustain the friction resulting from its passage; but if the head is too voluminous to readily traverse the pelvic canal, the traction becomes transformed into lateral pressure, the resistance of the pelvis serving to compress the head. Draw a handkerchief through a ring; the resistance of the ring crowds the linen together very closely during its passage. A force of fifty kilogrammes when well directed produces, according to M. Chassagny a pressure against the walls of the pelvis of thirty kilogrammes. Tractions become decomposed, therefore, in part at least, into compressions proportional to the force exerted, and these, as my father has demonstrated, become as much greater as the departure of the traction from the direction of the axis of the strait which is to be passed.

Whether by accident or design, tractions are almost always accompanied by lateral movements. Now in giving to the forceps these movements, the obstetrician transforms it into a lever which is as much more powerful as his arm in relation to the resistance is rendered longer. The carter, says M. Chassagny, whose harness is too weak for climbing a steep hill, makes his cart turn upon one wheel, then, stopping in its turn that wheel which has progressed, he seeks by reversing the manœuvre to advance the one which previously furnished the fulcrum. But a glance of the eye upon the road is sufficient to appreciate the effect produced upon the spot which furnished the first fulcrum; in addition it is easily understood to

what extent the repetition of these manœuvres might be expected to compromise the solidity of the vehicle. And he adds: lateral movements assist the accoucheur in the same manner that the key assists the dentist, while they are no more favorable to mother or child than the key to the gum, alveolus or tooth. These graphic images are perhaps not entirely exact in regard to the mechanism of the lesion, but if they have the mistake of exaggerating the dangers of lateral movements, they have at least the merit of attracting attention to the new force these produce, which assists the effort of traction.

Regarding the extent to which efforts of extraction may be carried without imprudence, though it is a matter of great importance to know the exact limit, it is utterly impossible to state it precisely; certain natures resist throughout, and others yield to the slightest shock. For want of precise information we shall endeavor, in order to avoid an excess either of timidity or temerity, to give an approximate idea of the pressure which may be supported by the osseous inclosure and soft parts of the mother.

Soft parts. Claude Bernard has demonstrated the physiological unity of similar tissues in the animal series; the properties of the genital organs are therefore nearly the same in woman and in our larger female domestic animals. Now the veterinary surgeons frequently employ upon cows, without ever producing mortification of tissues, formidable powers: the windlass, tackle, traction of ten men, etc., and if the animal sometimes succumbs it is never when the efforts have been the most violent, but when the labor has been too prolonged. Moreover, Jobert de Lambelle, who made a special study of the vesico-vaginal fistulae of women, declares that they are invariably the consequence of too protracted delivery, never of a seasonable application of forceps.

It would appear, therefore, that the soft parts of women ought to support considerable pressure without becoming gangrenous, providing that it is not too protracted, and providing, let us add, that the vitality of the tissues is not already affected by a long labor or by dyscrasiae of diverse nature.

Osseous parts. In the course of his experiments, Joulin

once saw the pelvic circle burst apart under a force of 288 kilogrammes, and M. Delore has tried to prove that one could pull with a force of 200 kilogrammes without danger of producing any rupture. We are acquainted with a case of pubic diastasis produced by the traction of an obstetrician simply pulling upon the forceps, and it is not so very wonderful, since, in cases which necessitate employment of much force, the bones have suffered either from rachitis or mollites ossium, and they no longer possess the normal consistence. Thus, it is not allowable, in regard to the osseous parts, to make use of the amount of force which the soft parts might appear to be able, in certain circumstances, to support without excess of danger.

Muscular force. Each obstetrician should know with exactness the force which he is capable of exerting by means of the forceps, since the mother and child are to sustain the result. The following are the averages furnished by three generations of our pupils pulling upon the cords attached to a small dynameter of Matthieu: they are higher than those indicated by Joulin and M. Delore: as said Julius Cæsar, *fortissimi belgæ*:

One man—pulling solely with the arm, without fulcrum, 65 kilogrammes; the foot taking support at the height of the instrument, 147 kilogrammes.

Two men—pulling without fulcrum, 110 kilogrammes; with fulcrum upon the floor, 240 kilogrammes.

Adding to these figures as much as is really added by giving the instrument lateral movement, it will be seen that by using two hands upon the forceps there may be obtained an array of force quite appalling.

Muscular force, though excellent for overcoming slight resistance, becomes of less use in surmounting those more serious. In struggling against a considerable obstacle our efforts become sudden, abrupt, jerking; like the mired horse, we strain every muscle. The muscles contract forcibly for several seconds, then relax, and their energy, at the outset most vigorous, wanes rapidly towards extinction in the fatigue at the end of a short series of interrupted efforts that become

less and less powerful. It is evident that tractions of this sort, violent, sudden, jerking, can neither be favorable to the head of the child, nor the tissues of the mother, nor the engagement of a rounded tumor in an elliptical canal, and that a regular mechanical force which can be measured by the dynameter and sustained is far preferable. Joulin has shown experimentally that in those instances where manual force developed by two men was sufficient to engage the head of the fetus in a given opening, a sustained mechanical traction produced the same result with far less force. Now this is a fact of extreme importance, in our opinion, for to economize force is, for mother and child alike, to economize compression.*

The ear is no more satisfied by a scale, the last note of which is not given, than is the mind by a series of propositions lacking a conclusion. We shall therefore give the note of the octave and conclude.

We are opposed to placing the forceps upon the head of an infant at term retained above a strait of less than seventy-five millimeters. This would be followed by one of two things; either the crushing of the head or breaking apart the pelvis, for the bi-auricular cranial diameter measures seventy-five millimeters and is irreducible.

With the pelvis offering at least a space of seventy-five millimeters between the points most nearly approximated, the head can pass with rigor, but upon the condition that the cranial vault changes form, and, when it measures nine centimeters, that the reduction should be about one and one-half centimeters. Nature,† as we have said, often accomplishes this

* "Whatever," says Joulin, "may be the prejudice against novelties, there is yet a result well worthy to arrest attention: it is that the 'aid forceps' extracts the fetus with an expenditure of force less by 30, 40 or 50 kilogrammes than that necessary in manual tractions, which nevertheless failed completely in instances where the instrument succeeded." The superiority of continued traction, compared with intermitting traction, has been demonstrated by calculus and by the experiments of M. Marcy.

† Among others, we have seen two children born under these conditions: one had facial hemiplegia, with the other the pressure of the sacro-vertebral angle had produced a limited gangrene of the scalp, only cured three weeks after birth.

reduction without killing the child, and when she is disposed to undertake it, she should be let alone, since she will do better than we. But the instances where the uterine forces triumph happily over such obstacles are exceptional, and generally art is obliged to come to the rescue of the woman in peril.

Let us give a rapid glance at the resources at its disposal. Certain authors have advised version; but this is to substitute for the difficulty an operation which is not without gravity. Prolonged waiting and ordinary forceps used with energetic muscular tractions, deeply compromise the child and are not without danger to the mother. Gastrotomy is an extreme measure to which the obstetrician only resorts in the most urgent cases; and, regarding symphseotomy, it is nearly of equal danger, so that the woman has the incontestable right to decline the heroic self-renunciation of a consent to the risks of either operation. Less perilous to the mother than these two operations, embryotomy is none the less open to serious objections; its legitimacy is debatable; moreover it is sometimes fatal to the mother, and such being the fact, what woman would authorize the attempt, or what practitioner would dare to propose it, if art presented a resource for the occasion which was less perilous for the mother and was not surely fatal to the child?

The Flemish lever* is perhaps the most suitable instrument in difficult circumstances which can be obtained. Where the pelvic diameter is too short it can be applied upon the corresponding cranial diameter, but it requires a prudent and skillful hand. Still nearer the reach of the generality of physicians than the lever, and appearing to us of all means proposed the least perilous to the child, is careful mechanical traction of a moderate degree, regulated by a dynameter. It accomplishes the maximum of result with the minimum expenditure of force, and consequently affords a happy improvement upon manual traction, which is accomplished by more or less violence.

We are convinced that when there is prepared a comparative statement of labors terminated by mechanical force and

* Lever of the third class.

those in which manual force is used, in pelvises of 75, 80 and 85 millimeters, the result will confirm theoretical assumptions, and that then—in spite of certain authorities deterred by routine, yet unable to prevail against reason and experience—the stubborn, violent traction of one obstetrician, and *a fortiori* of two, upon the forceps will be abandoned for means at once more efficacious and more gentle. *Non vi, sed arte.*

We have on two occasions applied the aid-forceps of Joulin,* once in a pelvis which we had estimated at 76 millimeters, but which really only measured 73; the other time in a pelvis of 75 millimeters. We terminated the labor with a force of 40 kilogrammes—that is to say, a force one-half less than if we had pulled with our arms—on one occasion in an hour, on the other in twenty-two minutes. The mothers made no complaint against the action of the apparatus and had most prosperous confinements. The infants could not be resuscitated; though the heart was still pulsating in both of them, the nervous centers had suffered so severely that respiration could not be established. Without entering into any criticism upon the imperfections in traction apparatus which time will doubtless remove, there is a general statement which we think should be made at this point. Continuity seems to us to be an unfavorable condition of mechanical traction, alike for the maternal tissues and the head of the child. Nature does not thus exert its forces without intermission; each pain is followed by an interval of repose, a lull during which the circulation which has just been much embarrassed if not interrupted, may resume its course. In future, when employing mechanical apparatus, we shall take care, at the risk of slightly prolonging the operation, to detach the cords from time to time.

* Bulletin de l'Acad. royale de méd. de Belgique, T. IV., 3e série, no. 3.

Correspondence.

[The following communication was received too late for insertion in its proper place.—ED.]

REPLY TO DR. B. C. MILLER.

MESSRS. EDITORS: It is rather difficult to frame a satisfactory reply to such a tangle of blunders as I find in the letter of Dr. B. C. Miller, published in your last issue. Nevertheless as the Doctor aims his blunderbuss mainly at me, I will with your permission, reply as briefly as possible.

Divested of its verbiage and translated into English, the Doctor's letter seems to mean, (1st.) That he was the originator of my investigations in relation to cholera in 1873, and that the work was carried on under the supervision of the Board of Health, whereof he was then Superintendent. (2d.) That the Board of Health "paid all expenses" connected with these investigations; and this proposition is so put as to lead your readers to believe that I was paid for the work. (3d.) That I have been guilty of courtesy toward Dr. Ely McClellan, of the U. S. Army.

In support of the first proposition Dr. Miller cites the appointment of Dr. Simons as Assistant Sanitary Inspector, and the object of his appointment in the following language: "Dr. Simons was appointed Assistant Sanitary Inspector, with instructions to investigate fully the causes of the disease, and to make *post mortem* examinations of all cases, where one could be obtained, as I desired to have an examination made of the specimens obtained." (*Journal & Examiner*, for Aug.)

But on the 31st of March, 1874, in his *official report*, Dr. Miller writes as follows, concerning Dr. Simons' duties: "August 10th, (1873,) upon the retirement of Dr. Rauch, I was appointed Sanitary Superintendent, and visited the district" (*i. e.* the cholera district) "for the first time in company with Dr. Simons, a physician residing in the district, and visited some ten or twelve cases. Dr. Simons was appointed *Special* Sanitary Inspector, with directions to superin-

tend the enforcement of needed sanitary measures in that district, especially in the matter of daily disinfection, which was rigidly enforced on all premises." * (Italics are mine.)

I find the same declaration in regard to Dr. Simons, both in the "Report of the American Public Health Association," Vol. I., page 263, and also in the "Government Report on Cholera." † In his paper in the Government Report, Dr. Miller says, "Dr. Simons was appointed a *Special Sanitary Inspector to enforce the sanitary regulations of the district.*" (Italics are mine.)

It is scarcely necessary to call attention to the inconsistency of these two sets of "instructions," or to the fact that it was impossible for Dr. Simons to execute both; but it is proper to note that in his *official report, made more than two years ago*, Dr. Miller declares that Dr. Simons was charged with the "enforcement of sanitary measures," disinfection, etc., but he was *not* directed to "investigate the causes of the disease," or make *post mortems*. The conclusion is inevitable that in Dr. Miller's recent letter the instructions to Dr. Simons were revised to fit the present aspect of the case.

Dr. Miller states in several places that my examinations were made at *his request*. In this he is entirely mistaken. Before he made any "request" at all of me, my specimens were prepared and mounted, and my report partly written. *Then* he "requested" me to furnish my report, or an abstract thereof, that he might present it to the "American Public Health Association," then about to convene in New York. ‡ With the approval of the then Secretary of the Chicago Society of Physicians and Surgeons, I did so; the paper was read before the Association, and published in its "Transactions" properly credited to me. On the evening of February 9th,

* Report of the Board of Health of the City of Chicago, for 1870-71-72-73, page 26.

† Cholera Epidemic of 1873, in the United States, page 215.

‡ This Association met about November 10th, 1873, (its officers were elected on the 13th,) whereas the Committee of the Society of Physicians and Surgeons was appointed August 18th and my investigations were commenced August 28th.

1874, I presented my completed report to the Society of Physicians and Surgeons. The meeting was quite fully attended, and I think Dr. Miller was present. The Society passed a vote of thanks for the report, and at the same time voted that the same be published in some medical journal. Some time after this Dr. Miller called upon me at my residence, and asked for the report that he might incorporate it in the Board of Health Report, then in course of preparation. At that time Dr. Miller *first* intimated to me that he was the real prime mover of all the investigations, and that he could rightfully claim my report. I remember that I felt and *expressed* some surprise, and I remember also that I felt considerable incredulity that I did *not* express. But as I cared little where the report was published, and as I regarded the vote of the Society of Physicians and Surgeons, above alluded to, as complimentary rather than mandatory, I yielded to the Doctor's solicitations, and allowed him to take that portion of the manuscript which contained the record of my observations. The first five or six manuscript pages he did *not* take. These pages contained the history of the origin of the investigations merely, and were of no scientific importance. Supposing, as a matter of course, that Dr. B. C. Miller, an honorable gentleman, and Sanitary Superintendent of the City of Chicago, could be trusted to say what was fair, true and right, and knowing as I did, that my preliminary remarks were needlessly prolix, especially for publication in a public report, I permitted the Doctor to omit the introductory pages, as *I wrote them, because* I believed that he would in fewer words place the credit for the prosecution of the work with the Society of Physicians and Surgeons, whatever he might say of himself as to originating the *idea* of the investigations. The proofs of that portion of my report which was published I saw; the proofs of Dr. Miller's remarks introductory thereto I did *not* see. Dr. Miller's official report, in its completed form, (of which mine formed a part,) I first saw after it was bound and ready for circulation.

In all this I am well aware that I have laid myself liable to criticism. I have only to say, however, that I did not deem

it necessary to prescribe conditions that the Sanitary Superintendent of Chicago should do what common courtesy demanded, or institute a system of *espionage* to prevent what I did not fear or suspect.

Secondly—Dr. Miller asserts that the Health Department “paid all expenses connected with the examination,” and this statement is repeated in a manner so loosely significant as to convey the impression that the Board of Health actually employed me to make investigations, and paid me for it. The “expenses connected with the examination” were merely nominal; but they were paid out of my own pocket, and the money has never been refunded by any one. It was, in fact, a matter so trivial that I have never thought it worth mentioning. As to the plates of which the Board of Health “retains possession,” they consist of six small wood cuts; they were paid for, I suppose, by the City of Chicago. They are in the “possession” of the Bulletin Printing Company of this city, (or were at a very recent date,) whereof Dr. B. C. Miller is a thrifty partner. As the Health Report was printed by the Bulletin Printing Company, I suppose the wood cuts were left in their vaults for safe keeping. Believing that they might be of some use to me and of no use to the City of Chicago, I asked Dr. Miller for them in September last. He gave me an order on the Bulletin Printing Company for them, on condition that I would return them after using them; but the order was accompanied by a verbal admonition that if I purposed using them on my own account I ought to get my printing done at the Bulletin Printing Company. I still hold the order, and said company probably “retain possession” of the plates.

And this is the real story concerning the “pay,” so far as I am concerned.

Thirdly—I regret exceedingly that Dr. McClellan’s name has been dragged into this business. It is useless for Dr. Miller to try to divert attention from the real issue by making Dr. McClellan “party defendant;” besides, it is, to say the least, something less than magnanimous. In our article in the May (*not* June) number of this Journal, it never occurred

to either Dr. Hyde or myself that we were complaining of Dr. McClellan, and certainly nothing could have been further from our intentions. For myself, I desire to say in the most positive terms, that Dr. McClellan's attitude toward me has so far as I know, been one of entire courtesy and liberality. That there may be no possibility of misunderstanding in the future I take this occasion to say that Dr. Hyde and I entertain the belief that Dr. B. C. Miller is the one person, and the *only* person, in fault as to the misappropriation of the work done by the Chicago Society of Physicians and Surgeons; except in so far as blame may attach to me personally, in that I trusted Dr. Miller too far. During the prosecution of his investigations in regard to the cholera epidemic of 1873, Dr. McClellan visited Chicago, and addressed the Society of Physicians and Surgeons, by special invitation. At the close of his remarks I was introduced to him, as were many of the members of the Society, and I remember that he spoke of my report in a complimentary manner. I *now* have a very indistinct recollection, also, that he intimated a desire to use my material in *his* report, then in course of preparation, although this fact had quite escaped my memory, until this recent discussion served to recall it. Exactly what passed between Dr. McClellan and myself, I do not now remember; but I believe that I went away with the understanding that I had been politely invited to furnish my report for the Government Report, but that nothing definite had been said on either side. I remember also, that I felt a little surprised because I did not subsequently hear from Dr. McClellan, on the subject. According to a letter from Dr. McClellan to Dr. Miller, the former wrote me "several times on the subject," but I have never received a letter, or a line, from Dr. McClellan in my life, on this or any other subject.

As a matter of fact, I think my investigations received more credit than they deserved, but however valuable or valueless they may be, they were *not* undertaken or completed at the "request" of Dr. B. C. Miller; he was *not* in "constant communication" or any other kind of "communication" with me while my studies were in progress; he never paid me for

making the investigations, directly or indirectly, and, in fine, he never had anything to do with them from first to last.

The silly personalities in which Dr. Miller indulges, I pass by, because it is too small business for a man who has anything else to do, to notice them.

I. N. DANFORTH.

Chicago, August 5, 1876.

Summary of Progress in the Medical Sciences.

[Superabundance of "copy" has compelled the editors to allow but little space to this department this month. The intention has been, and still is, to make the SUMMARY OF PROGRESS, which is the result of much labor, one of the most prominent features of this JOURNAL.]

I. PRACTICAL MEDICINE.

1. *Cure of Tetanus by Mechanical Measures.* CALASTRIE. (*Gazetta Medic, Lombardia*, No. 27.)

A patient, who was convalescent after various attacks of haemorrhage from the skin and mucous membranes, was wounded in the sole of the right foot and had partial tetanus result. There was considerable rigidity of the muscles of the cervical region and those presiding over the movements of the jaw. Sulphate of quinia and chloral were followed by temporary relief only. Then C. thinking that the difficulty of injecting sufficient nutriment was due to the localization of the tetanic affections in the muscles named above, concluded to overcome the rigidity by forced movements of flexion, extension and rotation. This was continued till voluntary movement became possible. The jaws were then separated little by little from day to day, until they could be more and more widely opened, and the patient could himself take solid food. This treatment continued during the month of August, and by autumn the cure was completed.

2. *Case in which foreign bodies were inserted in the brain with suicidal intent, and retained several months.* W. B. CARPENTER, M.D. (*Am. Jour. Med. Sci.*, April, 1876.)

The patient was a State prison convict, twenty-eight years old, who was insane. He was a strong, healthy man, with a well developed brain, weighing 56 ounces. Two years before his attempted suicide he had been

discharged from an insane asylum where he had spent a year. During the time subsequent to this discharge he was kept in the hospital of the prison. He was caught one night stuffing No. 20 broom wire into the cavity of his cranium through an opening in the skull he had made, about an inch above the right ear with an awl. Over four inches of the wire was withdrawn. A month later he drove an awl into his brain through the skull near the top of the head. Soon afterward he was found thrusting another piece of wire laterally through his skull, and it is known the piece reached through to the opposite side of the brain. From this there only resulted slight paralysis, which in two weeks was nearly well. His desire to die now ceased. Months afterward he, as it was believed, by pure accident, took an overdose of morphine to procure sleep, and died.

Post mortem. There were found in the right hemisphere, some of them resting on the dura mater at the base of the brain, the following articles: Two pieces of wire, each over two inches long; a four-penny nail, $2\frac{1}{4}$ inches long, and a needle $1\frac{1}{8}$ inches long. Two of these bodies were found in the middle and two in the anterior lobe. All "were more or less insulated by a gelatinous substance closely adhering to them." There had never been a loss of any of the special senses, or any symptoms of aphasia.

3. *Gangrene of the Limbs in Typhoid Fever.* VALETTE. (*Lyon Medical*, Feb. 6, 1876.)

The author gives an interesting account of a young servant girl, attacked with typhoid fever and pneumonia of one lobe of the right lung, whose condition became so deplorable that large purulent ulcerations occurred over the trochanters and sacrum, extensive portions of the skin mortified over the perineum and vulva, and two-thirds of one foot became black and mummified, with a surrounding line of demarcation. Amputation was performed at the urgent request of the sufferer, to relieve her of her pain, which no form of narcotic dressing could assuage. She survived twenty-three days.

Post mortem. About 25 cicatrices were found in the small intestines, red heptization of the inferior lobe of the right lung, left ventricular heart clot, and a whitish gray clot at the point of bifurcation of the primitive iliac artery, closely adherent to the vascular walls, its superior half free and closing like a valve the external iliac artery.

The author concludes: 1st. That gangrene of a limb may be classed among the possible complications of typhoid fever. 2d. That the gangrene is not to be attributed to that ill defined and almost unintelligible cause known as malignity, but to determinable organic conditions. 3d. That this complication may be due to arteritis, developed in a manner similar to that of other causes in typhoid fever. (Patry.) But as shown in this case, the gangrene may be determined by an embolism, as described by Bonnet, Van Swieten and Virchow.

4. *Diapedesis of Leucocytes and its present pathological significance.* DR.
N. B. SIGER. (*Proceedings Med. Society, County of Kings*, June, 1876.)

After a review of the history of the studies on this subject and a reference to the different experiments for the demonstration of the processes of inflammation and the behavior of leucocytes in this and other pathological conditions, he sums up from the discussions of the subject the present state of the case, as follows:

1st. The greater part of all pus, wherever found in the body, either in vascular or non-vascular tissues, is made up of emigrated white blood cells or their descendants.

2d. Whether the normal cells of the part proliferate in inflammation is at present *sub judice*; the preponderance of evidence is against it.

3d. While emigrating, the leucocytes rapidly proliferate in the tissues.

4th. The emigrated cells are capable of undergoing metamorphosis, and of being transformed into fixed elements, similar to those of the tissue in which they are situated; this is shown in the healing of wounds, where the granulating tissue, which is now known to be made up of emigrated cells and their descendants, is transformed by contact with the normal parts into connective tissue and epithelial cells.

5th. Hence, organization is accomplished by the fixation of the wandering cells and their transformation into cells like those of the neighboring tissues.

6th. When suppuration occurs in mucous or serous surfaces, while most of the pus is composed of leucocytes, the participation of the local epithelium in the process is extremely probable.

7th. The youngest epithelial cells of a tissue are in all probability nothing but organized wandering cells.

8th. Diapedesis is believed to be as prominent a phenomenon in the so-called chronic forms, as in ordinary acute inflammations.

9th. Morbid growths generally, which do not belong to the connective tissue type, are believed by many to be intimately connected with the emigration of cells at an irritated point.

10th. The recurrence of malignant growths after careful extirpation, is believed to be due to the emigration of the young cells of the tumor, which possess an undoubted power of amoeboid motion.

5. *Profuse Salivary Flow and Swelling of the Tongue.* W. CARSON, M.D.
(*Cin. Lancet and Observer*, June, 1876.)

The patient was a woman of fifty; she had had for some years cardiac disease of some sort; she had pneumonia involving one lung, then as this was recovering she had supervene decided symptoms of meningitis—delirious actions and occasionally drowsy periods—when it was found she had a large quantity of albumen in her urine. Now, one morning when the tongue was dry and small and smooth it suddenly became moist, large and swollen, so that it filled the entire space between the teeth. One-half the tongue was more swollen than the other, and there was an enormous

out-flow of apparently salivary and viscid fluid, without coughing or vomiting. Otherwise there was no change in the patient's condition, and these conditions continued until the death of the patient. How long a time this was, we are not informed. No mercury had been given. Dr. C. refers to the various experiments that have demonstrated the connection of the chorda tympani nerve, the glasso-pharyngeal and the sympathetic with the circulation in the tongue and salivary glands, and then says: "It would seem then, that the principal medium, by which this association of congestion or tumefaction of the tongue and profuse salivary flow is produced, is the chorda tympani nerve, with some added effect from the vaso-dilating fibres of the glasso-pharyngeal." Again he says: "The facts are of great physiological importance, as proving the existence of active vascular dilation, under stimulation of a few nerves; but they have beside, their clinical aspect." "The experimental data afford a strong support to the supposition that the meningeal irritation in our patient comprehended such an area as to involve the larger and smaller nerves of the tongue and submaxillary glands in their intra-cranial sites, that probably the excitation was direct and not reflected."

II. SURGERY.

1. *Application of Caoutchouc in Surgery. (The Medical and Surgical Reporter, May 27, 1876.)*

M. Tarogenne, of Lyons, thus speaks of the cauterization of tissues rendered anemic by means of Esmarch's elastic bandage:

The cauterization gives better results than when it is practiced on parts in which the circulation has not been suspended. Although it is not apparent at the moment of operation, the hot iron produces its effects more deeply. The surface for cauterization contains no liquid, it does not produce vapor, and the operator can watch the exact points to be attacked better. The integuments do not redden under the influence of the radiating caloric; they preserve their color or become slightly pale. The extent and depth of the cauterization are only shown when the elastic bandage is removed. These effects can be explained by the diminished loss of heat that the iron undergoes when it is not in contact with liquids, which, as a result of the high temperature, are converted into vapors. When it is necessary to act on fungoid tissues in osseous parts deeply situated, this means should be preferred to all others.

2. *Diagnostic Value of the Ileo-Femoral Triangle in cases of Injury of the Hip Joint; more particularly of Impacted Fracture. THOMAS BRYANT, F.R.C.S. (The London Lancet, April, 1876.)*

In a clinical lecture at Guy's Hospital Mr. Bryant cites a number of cases illustrating the value of the ileo-femoral triangle in the diagnosis of

impacted fracture of the neck of the femur. The triangle is so called because it is found between the ilium and the femur. The lines which form it are, he claims, readily made out, and any shortening of the one which he terms the base, can be easily detected. One side of this right angled triangle is represented by a line drawn from the anterior superior spinous process of the ilium to the top of the trochanter major. The second is drawn from the anterior superior spinous process of the ilium directly downwards to the horizontal plane of the recumbent body. The third, which is the base of the triangle, is drawn at right angles to the second, and falls upon the first where it touches the great trochanter. It is to this third line the lecturer's observations refer, and he considers it the test line for fracture or shortening of the neck. Mr. Bryant confidently asserts, upon repeated proofs, that whilst in a healthy subject these ilio-femoral triangles are exactly similar upon the two sides of the body with equal sides and equal angles, with equal confidence assures us that in all cases of injury to the hip in which shortening of the neck of the thigh bone exists, the amount of shortening can readily and accurately be made out on comparing the bases of the triangles of the two sides. That in impacted fracture of the neck of the thigh bone, where on the sound side, the base of the triangle will, in the adult, measure its average normal of two and a half inches, on the affected or injured side, it will measure from half an inch to more than one inch less. The measurements should be taken with the patient in the horizontal position, the pelvis being at a right angle with the spine and the two femora parallel. A tape is then allowed to fall from the anterior superior spinous process of the ilium of one side to the horizontal plane of the body, and a second tape employed to measure the distance between this vertical tape and the upper border of the great trochanter on the same side. These are compared with measurements from corresponding points on the opposite side of the body. Under these circumstances there is no need for rough manipulation of the injured limb, no looking for crepitus, no forced flexion of the thigh, abduction or rotation.

3. *New Methods in Esmarch's Bloodless Operations.* (*The Medical Record*, New York, May 6, 1876.)

Prof. Esmarch published in Langenbeck's Archives some new applications of the elastic bandage for bloodless operations. The application was successfully used in a case of myxosarcoma of the right axilla, which required a removal of the whole arm, with the scapula, and the outer half of the clavicle. He found the plan very efficient in preventing haemorrhage during an operation for the relief of a man almost the whole of whose penis, with the anterior surface of the scrotum, had been destroyed by epithelial cancer. In reply to the question how long the principal parts of the body may be kept in the bloodless condition, he said that the two lower extremities may be kept so completely for two hours and a quarter without injury.

4. *On Hospital Gangrene.* (*The Medical and Surgical Reporter*, April 15, 1876.)

In a paper in the *Archiv für Klin. Chirurg.*, by Prof. Von Nussbaum, some details of much practical importance are given with regard to the prevention and curative treatment of this affection. In 1872, the first year of its appearance in the hospital, the gangrenous condition of the wounds in those attacked was always readily and successfully controlled by the local application of lotions containing nitrate of silver, corrosive sublimate, or carbolic acid; but as the distinctive changes became more and more acute, it was found necessary to have recourse to more active means, and to apply caustic paste and the actual cautery. Energetic applications of the latter agent proved the most efficacious, and a perfectly successful result of such treatment was usually indicated by a previous fall of the patient's temperature. During the prevalence of the gangrene many different attempts were made to protect healthy wounds and sores from contagion. The continuous water bath, applications of ice, moist warmth, lotions of carbolic acid, salicylic acid, chlorine water, etc., were tried without good results. Finally Lister's antiseptic plan of dressing was practiced most strictly, so that no open surface was dressed save under the carbolic acid spray, and no instruments or dressings used save after careful disinfection. Hospital gangrene at once ceased, and not a single case has been observed in Prof. Von Nussbaum's ward since the adoption of this plan of dressing, although at the period of its first use eighty per cent. of the surgical patients had been affected. He holds that the secret of Lister's method lay in the pedantic exactness in its mode of application.

5. *The Prevention of Pain after Applications of the Actual Cautery.* R. J. LEVIS, M.D. (*The Medical Times*, Philadelphia, March 18, 1876.)

Dr. Levis makes use of the local anæsthetic action of carbolic acid in his frequent resort to the actual cautery, with the result of the most complete avoidance of consequent suffering. His practice is to apply pure carbolic acid on and for a short distance around each point of application of the cautery before the patient recovers from the influence of the general anæsthetic which has been used. The crystals of carbolic acid are deliquesced by warmth, and the liquid applied with a brush. The part is then covered with a light dressing. Should pain recur after extensive or deep use of the cautery, the application may be renewed. He has not, however, found a second application necessary.

III. OPHTHALMOLOGY.

1. *Ophthalmoscopy in Commotion and Contusion of the Brain.* BOUCHUT. (*Gaz. des Hôp.*, 123, 1875; *Centralbl. f. Chir.*, 12, 1876.)

Bouchut considers the examination of the fundus oculi with the ophthalmoscope as the surest diagnostic means by which to discriminate between

the simple commotion and the graver or traumatic lesions of the brain. If there be commotion only, the fundus shows a normal appearance; but in the case of contusion of the brain, with or without any consecutive inflammation, and also in cases of a serous or haemorrhagic effusion into the cranial cavity the signs of a disturbance of the circulation in the ophthalmic veins will be found in the optic disc. This appears swollen, uniformly red and sometimes more vascular; its outlines are ill-defined, because the serous infiltration which extends from the papilla to the neighboring portion of the retina, renders the margin of the disc rather indistinct. On these signs of the "engorged papilla" Bouchut could make a sure differential diagnosis in four cases in which the clinical symptoms were very unsatisfactory, and left the diagnosis very doubtful.

2. Affections of the Eye due to Diabetes Mellitus. PROF. TH. LEBER.
(*Arch. f. Ophth.* xxi., 3).

It is a well known fact that the crystalline lens sometimes becomes opaque (cataractous) in the course of diabetes mellitus; but this affection of the lens is not the only pathological change which occurs in the eye, or which could account for the dimness of sight the diabetic patients so often complain of. By a careful collection of the literary material, and by an analysis of a number of cases which fell under his own observation, Prof. L. is enabled to enumerate the following affections of the eye as occasional complications of diabetes mellitus, to-wit: 1, Haemorrhage into the retina and vitreous humor; retinitis apoplectica, with or without degeneration of the retina; 2, amblyopia without any visible pathological changes in the fundus oculi; 3, atrophy of the optic nerve; 4, paralysis of the accommodation and sphincter pupillæ; 5, paralysis of ocular muscles. And it is interesting to learn that in several cases the patient's first complaint was about the sight, while he appeared yet to be in good health; the diabetes was detected, so to speak, through the disturbance it has caused in the functions of the eye. Prof. Leber therefore makes it his rule to test the urine of the patient for sugar, carefully and repeatedly, in every case of amblyopia without any satisfactory visible changes in the fundus.

3. Neuro-retinitis caused by Lightning—Consecutive Blindness. BRIERE
(*du Havre.*) (*Gazette des Hôpital.*)

A young girl, aged 11 years, in excellent health previously, was caught in a violent thunder-storm while returning to her home from school. She did not look at the "zig-zags" of the lightning, as so many do imprudently, but cast her eyes toward the ground. The soil was, however, dry and blanched from the summer's sun of the previous days, and strongly reflected the light from the houses.

The girl had great difficulty in reaching her home in consequence of dizziness, which persisted during the evening. She slept well that night, but, on awaking, was almost blind, being unable to distinguish in the house anything more than the form of persons and the largest objects. In

twenty-four hours the blindness was complete, there was only a feeble luminous sensation, and after waiting a fortnight the child was brought to B. The physiognomy and external aspect indicated the sequence of a profound affection of the ocular globes.

The pupils were widely dilated, and no longer sensible to the action of light and obscurity. The ophthalmoscope showed well-marked neuroretinitis of both sides—choked papillæ, retinal œdema and venous hyperæmia. She could scarcely decide whether a lighted lamp was held in front of her. Minute doses of calomel, a leech daily behind each ear, synapisms on the nucha, and a dark chamber were ordered. Under this treatment there was moderate improvement for a time, so that the child could almost recognize its mother; but the idea became prevalent in the neighborhood that the patient was under the spell of witchcraft, and all scientific treatment was speedily exchanged for the ridiculous practices of superstition. Some months later B. heard that the little patient was totally blind.

An interesting point in this case was the fact that, though passing through a thunder storm, the child was so far distant from the electric explosions as to *hear no thunder*. There was consequently no injury by shock, but solely by intense reflected light.

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